EXHIBIT A

EXPERT REPORT OF DR. ANDREW A. BEVERIDGE

I. Summary of Conclusions

1. Latinos constitute a substantial proportion of the total population and citizen voting age population ("CVAP") in the Town of Islip ("Islip" or "the Town"). According to the 2017 one-year American Community Survey, which is the most current data available, Islip's total population is 34.5% Latino and Islip's CVAP is 25.9% Latino.

2. Islip's Latino population is geographically concentrated in the northwest portion of the Town, in or around the hamlets (Census Designated Places) of Brentwood, North Bay Shore, and Central Islip.

3. Based on my analysis of Islip demographics, Latino citizens of voting age are sufficiently numerous and geographically compact to create one majority-Latino CVAP district in a four-district plan that is drawn in accordance with traditional districting principles.

II. Credentials

4. I am a Professor of Sociology at Queens College and the Graduate Center of the City University of New York, and served as Chair of the Queens College Sociology Department from 2006 to 2018. My primary responsibilities at Queens College and the Graduate Center are teaching statistics and research methods at the graduate and undergraduate levels, and conducting quantitative, statistically-based social research. I have a Ph.D. in Sociology and B.A. in Economics from Yale University, and I have been a professor since 1973, first at Columbia University until 1981, and then at Queens College and the Graduate Center of the City University of New York since then.

5. My areas of expertise include demography and the statistical and quantitative analysis of social science datasets, most particularly including Census data, survey data, and administrative records. I am an expert in the application of Geographical Information Systems

("GIS") technology to the analysis of social patterns. I regularly publish results and analyses in professional journals and peer-reviewed books. Some of my analyses have served as the basis for articles in *The New York Times*, where I have served as a demographic consultant since 1993, through an agreement between Social Explorer Inc. and *The New York Times*.

6. I am the co-founder and CEO of Social Explorer Inc., a website that provides demographic and other social data in a visual form. The site and related projects have won six awards and had over one million users in the last year. The site is distributed to libraries by Oxford University Press, and is licensed to Pearson Publishing across all of higher education for the development of curricular materials. I have also served as a consultant to a number of public and private entities, where I provide services related to demographic analysis.

7. I have been involved in districting and redistricting since the 1992 round, where I crafted the plan for the Yonkers City Council that was put into place under court supervision. Working for the City of Yonkers, I drew the council districts for two different decades based upon data from the 1990 and 2000 Census. In 2011, I was retained by Westchester County to prepare a redistricting plan following the 2010 Census for the Westchester County Legislature. That same year, I was also retained by the City of New Rochelle to prepare a redistricting plan for the New Rochelle City Council following the 2010 Census. Both maps were put into place. The maps I prepared for Westchester County and the City of New Rochelle were based upon data from the 2010 Census and American Community Survey.

8. I have provided expert opinions and testimony regarding proposed districting plans in several districting cases, including *Goosby* v. *Town Board of Hempstead*, No. 88-cv-2453 (E.D.N.Y. 1997), and *United States* v. *Port Chester*, No. 7:06-cv-15173 (S.D.N.Y. 2010). I have participated in other cases, including two cases where I presented a state-wide redistricting

plan for New York, as well as cases related to districting for Suffolk County, New York; Bridgeport, Connecticut; New Rochelle, New York; and Nassau County, New York. In each of these cases and engagements, I have used what are generally referred to as traditional districting principles to craft the plans presented. Based on my extensive experience in drawing districting plans, I have a deep understanding of the application of traditional districting principles, and have duly applied them throughout the course of my analysis in this report.

9. I have also provided expert opinions and testimony in demographic and statistical analysis outside of the districting context in a number of cases, including but not limited to: *Winfield* v. *City of New York*, No. 1:15-cv-5236 (S.D.N.Y.) (Declaration, 2017–present); *Westchester Residential Opportunities, Inc.* v. *Clinton Terrace L.P.*, No. 7:16-cv-9273 (S.D.N.Y.) (Report, 2017); *Akagi* v. *Turin Housing Development Fund, Co.*, No. 1:13-cv-5258 (S.D.N.Y.) (Report, Deposition, Rebuttal Report, 2016–present); *Aref* v. *Sessions*, No. 1:10-cv-539 (D.D.C.) (Report, Deposition, 2013–present); *New York* v. *Evans Bancorp, Inc.*, No. 1:14-cv-726 (W.D.N.Y.) (Report, 2014–2015); *United States* v. *City of New Orleans*, No. 2:12-cv-1924 (E.D. La.) (Report, Deposition, 2013–2014); *City of Joliet* v. *Mid-City Nat'l Bank of Chicago*, No. 1:05-cv-6746 (N.D. Ill.) (Report, Deposition, Trial Testimony, 2012–2013); *United States* v. *St. Bernard Parish*, No. 2:12-cv-321 (E.D. La.) (Report, 2013–2014); *Favors* v. *Cuomo*, No. 1:11-cv-5632 (E.D.N.Y.) (Hearing Testimony, 2012); *Rivera* v. *Incorporated Village of Farmingdale*, No. 2:06-cv-2613 (E.D.N.Y.) (Report, Deposition, 2009–2014); *Aguilar* v. *Immigration and Customs Enforcement Div. of the U.S. Dept. of Homeland Security*, No. 1:07-cv-8224 (S.D.N.Y.) (Report, Rebuttal Report, Deposition, 2010–2013). A virtually complete list of cases and other matters in which I have provided opinions, as well as a list of publications, are listed in my curriculum vitae, attached as Exhibit 1.

III. Scope of Assignment

10. I have been retained by counsel for Plaintiffs in *Flores* v. *Town of Islip*, to analyze the population in Islip and the possibility of drawing a four-district plan for Islip, in accordance with traditional districting principles, in which Latinos[1] would form a majority of the CVAP in one district.

11. Such a district would be drawn by following traditional districting principles, including contiguity, population equality, compactness, and preserving political and geographic subdivisions.

12. I am being paid $225 per hour plus expenses for my analysis and testimony.

IV. Underlying Data, Maps, and Software Relied Upon

13. I used three main types of materials to conduct the analysis set out in this report:

a. **Census data and maps.** I have relied upon materials obtained from the U.S. Census Bureau, including demographic data from 1980 to 2018, as well as various map and boundary files.

b. **Election Districts ("EDs") and election results.** I have relied upon materials obtained from the Suffolk County Board of Elections and Suffolk County Division of Geographic Information Services, including election district maps and data on election results from 2002 to 2017.

c. **Data processing software.** I have relied on three types of software – Microsoft Excel, SAS, and Maptitude for Redistricting – in order to process these data and conduct the analysis contained in this report.

[1] The American Community Survey Questionnaire defines "Hispanic, Latino, or Spanish Origin" as one category. I use "Latino" to refer to those of this category.

14. The history, significance, and utility of each of these materials is discussed in more detail below as a foundation for the methodologies I have applied to reach my conclusions.

A. Evolution of Census Survey Methods and Data Releases

15. The primary demographic data used throughout my analysis is derived from the U.S. Census Bureau. The Census is mandated by the U.S. Constitution and was initially developed to apportion Congressional Representatives among the states. In modern times, use of data from the Census Bureau is ubiquitous in creating districts for virtually all legislative bodies in the United States that are elected through a district-based structure. Below, I describe historical changes regarding the form and frequency of surveys conducted by the Census Bureau, as well as data collected from those surveys.

16. **Decennial Census.** The decennial Census is conducted each decade, with surveys distributed to every household in the United States. From 1940 through 2000, the decennial Census included two forms of surveys: (1) a short-form, with a brief set of basic questions; and (2) a long-form, which included additional, more detailed questions in addition to the basic set contained in the short-form. The short-form survey collects basic data on the total population, such as the number of individuals living in a household as well as the age and sex of those individuals, whereas the long-form survey collects more detailed demographic data, such as social, economic, and immigration status, and nativity. In 2000, the last year the decennial Census included a long-form survey, approximately one-sixth of households received the long-form survey, while the remaining households received the short-form. Thus, the decennial Census captured a fully comprehensive nationwide dataset regarding the short-form questions, while also collecting data on the additional long-form questions by sampling a substantial proportion of households.

17. **American Community Survey ("ACS").** Beginning in the late 1990s, the Census Bureau began developing a survey program to collect and release long-form data on a more frequent basis, which was launched in 2005 as the American Community Survey.[2] Thus, the decennial Census long-form survey was discontinued after the implementation of the ACS. The 2010 decennial Census included only the short-form survey distributed to all households. The more detailed data from the old long-form Census is now collected through the ACS by using a "rolling sample" method, rather than a once-per-decade sample as a component of the decennial Census. The ACS collects data continually through monthly surveys based on random selection, with no address being selected more than once every five years. Approximately 95% of selected households respond. Survey responses are then aggregated on a yearly basis and released as an annual data set, *i.e.*, one-year ACS files. One-year ACS files are released for geographic areas larger than 65,000, and rules are in place to filter data if estimates are not obtained reliably. The ACS also compiles and releases five-year ACS files each year by aggregating survey responses for all 60 months within the preceding five-year period. The total aggregate sample size for the five-year ACS approaches that of the long-form decennial Census. As explained below, five-year ACS files include data for geographies down to the Block Group level, and replaces the data releases that were previously available only once per decade from the long-form Census. The U.S. Census Bureau also releases special files every year through its Redistricting Data Program, which are based on the five-year ACS files but tabulate and array data for ease of use in drawing districting maps.

[2] A description of the ACS program is available on the U.S. Census Bureau's website, https://www.census.gov/programs-surveys/acs.html.

B. Census Geography

18. Census geography is very well defined. The Census Bureau delineates geographic units at various levels of granularity according to various visible and non-visible features, certain pre-existing boundaries of legal significance, and in some cases pre-existing boundaries that have no legal significance but are generally recognized by the local population. Some but not all types of Census geographic units are delineated according to population requirements. The Census Bureau releases data files that are broken down according to certain statistical geographic areas. The particular geographic areas included in a file depend on the underlying dataset and the population of the geographic area at issue. Below is an explanation of each geographic unit and the geographic breakdown made available in different types of files.

i. Census Geographic Units

19. Census maps and boundary files[3] delineate certain areas of geographic significance at various levels of granularity, including, as applicable to my analysis, the Town of Islip, incorporated Villages, unincorporated Census Designated Places ("CDPs"), Census Tracts, Block Groups, and Census Blocks.[4]

20. The **Census Block** is the smallest geographic unit delineated by the Census Bureau. As its name suggests, the typical Census Block is a small, enclosed area bounded by streets or other visible features on all sides.[5] There are more than 11 million Census Blocks in the United States which, collectively, cover the entire U.S. territory. Census Blocks are not

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[3] Census data, maps and boundaries are publicly available for download from the Census website, www.census.gov. The earlier data are available for download from the National Archive (www.nara.gov) and many other sources such as depository libraries.

[4] For a fuller explanation of Census geographic designations, see Standard Hierarchy of Census Geographic Entities, U.S. Census Bureau (Oct. 2010), https://www2.census.gov/geo/pdfs/reference/geodiagram.pdf.

[5] In some cases, Census Blocks are delineated by visible features such as streams and railroad tracks, or nonvisible features such as property lines or the boundaries of a county, city, town, or school district.

delineated based on population; in fact, about 5.5 million of them have no residents at all. Census Blocks serve as the foundation for creating the larger Census geographic units.

21. **Block Groups and Tracts** are created by combining Census Blocks into larger units which are based upon population. Block Groups have a total population in the range of 600 to 3,000. Census Tracts generally have a population in the range of 1,200 to 8,000, with an average of about 4,000. Block Groups are statistical subdivisions of Tracts, and contain clusters of Census Blocks within the same Tract. There are about 75,000 Tracts in the United States and about 235,000 Block Groups.

22. **Census Designated Places ("CDPs")** are geographic areas defined by the Census Bureau to provide data for settled concentrations of population that are identifiable by name, but not legally incorporated.[6] CDPs are the statistical counterpart of incorporated Villages, although CDPs do not perform local government functions. Unlike Tracts and Block Groups, CDPs are not delineated based on population requirements. Their boundaries are typically defined in cooperation with local officials in order to reflect commonly understood geographic distinctions among the local population. For example, Brentwood, North Bay Shore, and Central Islip are each delineated CDPs. CDPs are often colloquially referred to as hamlets.

23. **Public Use Microdata Areas ("PUMAs")** are special non-overlapping areas that partition a state. Each PUMA contains a population of about 100,000. PUMAs are geographic areas that are assembled from a collection of Census Tracts and are drawn by state governments at the time of each decennial Census. PUMAs were initially developed to make it possible to

[6] CDP boundaries may change from one decennial Census to the next with changes in the settlement pattern; a CDP with the same name as in an earlier census does not necessarily have the same boundary. As described later in this report, the boundaries of CDPs within Islip – especially Brentwood, North Bay Shore, and Central Islip – have changed only slightly over the past decades.

analyze Public Use Microdata Sample ("PUMS") data with geographic specificity. Since the advent of ACS, PUMAs have also been one of the areas for which tabulated or aggregated data are supplied.

ii. Census Bureau File Types and Geographic Breakdowns

24. Decennial Census data is released down to the Census Block level for short-form data, and was released down to the Block Group level for long-form data until the long-form survey was supplanted by the ACS in 2005. The short-form decennial Census is the only file type that provides analysis at the Census Block level, which is made possible by its fully comprehensive sample size – *i.e.*, virtually every household.

25. Five-year ACS files include data down to the Block Group level, which is very similar to files previously compiled from the long-form decennial Census. Five-year ACS data provide a sufficiently large sample size for reliable analysis within Block Groups and more populous geographic units, but not within individual Census Blocks.

26. One-year ACS files provide data for geographic areas that have a total population of at least 65,000.[7] Thus, one-year ACS data are not available for Census Blocks, Block Groups, or Tracts. Data for specific CDPs, incorporated Villages, and municipalities are made available only where such geographic areas meet the population threshold. Although one-year ACS files are based on a relatively smaller sample size, the underlying data is appropriate for statistically meaningful analysis of more populous geographic areas.

27. The one-year and five-year ACS files are based on data collected from the same underlying survey process, but each type offers certain advantages depending on the desired

[7] The ACS previously released three-year ACS data sets for areas with a population of at least 20,000, but discontinued these releases in 2014.

analysis. One-year ACS files include data collected during only the most recent year, and are therefore the most current ACS data offered by the Census Bureau. However, these files do not provide data at the same level of geographical granularity as the five-year ACS. As of my drafting of this report, the most recent one-year ACS file available is from 2017.

28. Five-year ACS files, on the other hand, include demographic data down to the Block Group level. However, because the five-year ACS includes data collected over the previous 60 months, these files may not fully reflect the most recent trends. Five-year ACS files are thus considered to be "centered" around the midpoint of the date range – for example, the most recent available five-year ACS file is for 2013–2017, which is centered on 2015.[8]

29. The Census Bureau also releases special redistricting files every year through its Redistricting Data Program.[9] These special redistricting files are based on the five-year ACS, but array data in a very useful way to enable map drawing. Special redistricting files include data regarding citizenship and racial and ethnic classifications at a variety of geographic levels, most particularly at the Block Group and Tract levels.[10]

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[8] The American Community Survey, like all surveys, is subject to sampling error. Here, since the size of the resulting districts is well over 80,000, the sample size is approximately 9,000. Since the sample is complex, and there are a variety of methods to approach margins of error, the precision of the sample is hard to state precisely. However, considering an estimate of 54% of a given group in a district, and assuming the design effect decreases the effective sample size to 4,000, the margin of error of the estimate at a 99% confidence level would be less than 2%. This means that estimates of the percent of Latino CVAP in Islip are quite precise.

[9] These files are made available by the U.S. Census Bureau. More information regarding data offered through the Census Redistricting Program is available on the Census website, https://www.census.gov/programs-surveys/decennial-census/data/datasets/rdo.html.

[10] Unlike the special tabulations from the Census Redistricting Program, the data released in the one-year and five-year ACS files include data for Latino, non-Latino white, and an "other race" category, but do not include data for non-Latino black or other racial groups. In the special redistricting file, "other" is eliminated and those answering "other" are folded into other categories based upon an algorithm that considers their answers to other questions on the ACS. The vast bulk of individuals tabulated as "other race" report that they are Latino. If respondents report that they are "other race," their responses to other questions on the ACS are used to put them into a likely racial category. Accordingly, on the redistricting tabulation, they are added to one of the valid racial categories.

30. Thus, I have carefully considered the tradeoffs involved in determining which file type is most appropriate for certain steps of my analysis. Short-form decennial Census data are useful, but provide limited detail in terms of demographic characteristics. Furthermore, data from the 2010 census is now nine years old and is therefore of limited utility in drawing conclusions about present circumstances. ACS files include more demographic detail and are much more current than the 2010 decennial Census. One-year ACS files are advantageous for analysis of the most current demographics and recent trends in geographic areas with larger populations. However, five-year ACS files enable analysis at a level of geographic granularity that is not possible using one-year ACS files.

31. Use of ACS data for demographic and districting analysis is generally accepted practice. Indeed, the American Community Survey is considered the "gold standard" among demographic surveys, and is used for a wide variety of academic, commercial, and other purposes. There have been a series of conferences, including a conference with peer reviewed presentations organized by the Committee on National Statistics of the National Academy of Sciences, detailing the various uses of the ACS, which include, among other things, redistricting.[11]

32. To analyze demographic comparisons over time, I used data from the 1980, 1990, and 2000 short-form and long-form decennial Census, the 2010 short-form decennial Census, and the one-year and five-year ACS files from 2006 through 2017.

[11] *See* National Academy of Sciences, Committee on National Statistics, *Benefits, Burdens, and Prospects of the American Community Survey: Summary of a Workshop* (2013). I contributed to this workshop. The ACS Users Group has held a series of conferences, some of which have featured me as a presenter, which are described at: https://acsdatacommunity.prb.org/p/conferences.

33. For my analysis of current demographics in Islip and smaller geographic areas within Islip, I used the most current ACS data that comparably reports information for the particular geographic area at issue, which may be one-year or five-year ACS files depending on the population of the area. For information most relevant to district map drawing, I have used the Census Bureau's special redistricting files based on the 2013–2017 five-year ACS. These files were released on February 22, 2019.

iii. Maps and Boundary Files

34. In 1990, the Census Bureau began to digitize many of its maps (including those from 1980) using Geographical Information Systems ("GIS"). Using these maps in conjunction with commonly available GIS software, it became much easier to produce maps depicting a wide array of social characteristics.

35. For my analysis in this report, I used Census boundary files from 1980 forward. I obtained files for 1980 through 2000 from the Minnesota Population Center's National Historic Geographic Information System project, an ongoing project funded by the both the National Science Foundation and National Institutes of Health. For years 2010 and later, I used files from the Census Bureau.[12]

36. I also used data from the Suffolk County Board of Elections ("BOE") for the results of all elections from 2002 through 2018, broken down by ED. In addition, I used Suffolk County map files, which delineate the current boundaries of EDs in Islip. The most recent ED maps were drawn in 2012 and have remained constant through the present day.[13]

[12] These files are available for download from the Census website, https://www.census.gov/geo/maps-data/data/tiger.html?#.

[13] These materials are maintained by the GIS Division of the Suffolk County Department of Information Technology.

C. Map-Drawing Tools

37. In analyzing the various datasets described above, I utilized: Microsoft Excel software; SAS, a well-known software program used to run statistical analyses and organize data; and Maptitude for Redistricting, the leading GIS software used for creating district maps.[14]

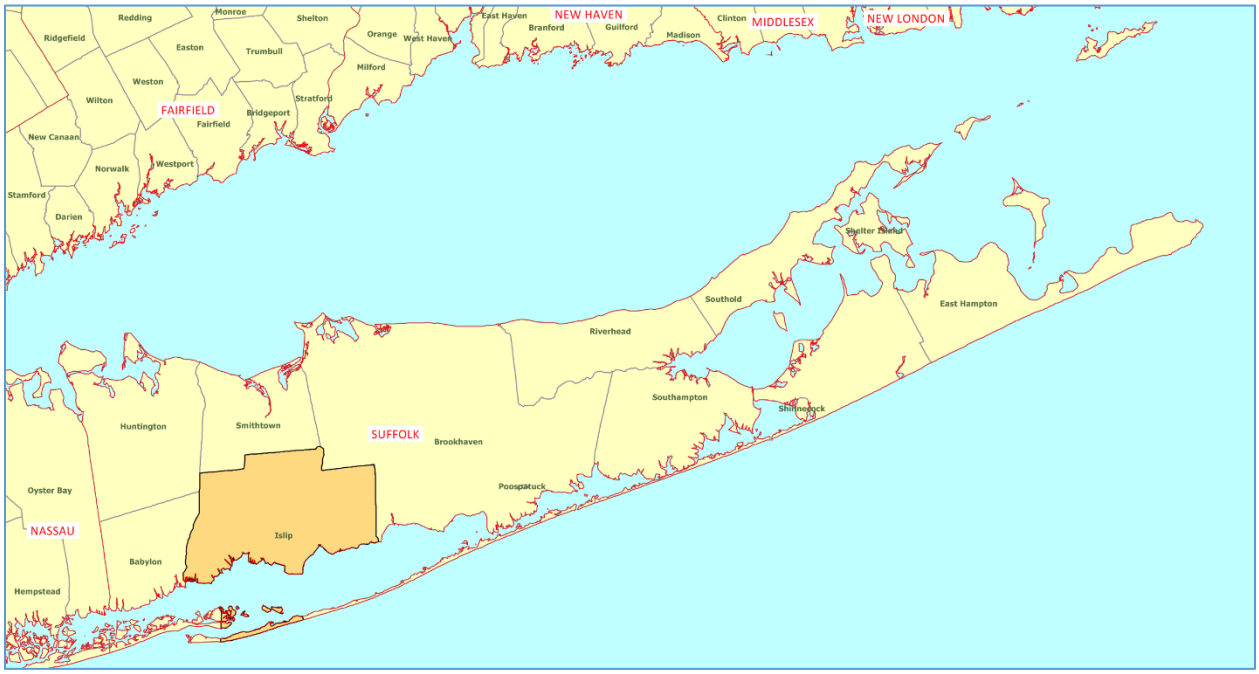
38. In the districting context, a GIS package makes it possible to combine boundary files (such as the ones from the Census Bureau and Suffolk County) with data for particular geographic areas, such as Census Blocks or EDs. GIS software provides tools that make it possible to create redistricting plans based upon these data. It displays the boundaries of areas such as villages or CDPs, as well as roads, highways and other physical boundaries. It is also possible to highlight population concentrations using thematic mapping features, which shade particular geographic regions based on the percentage of a given group within that region. Reporting tools assist the map drawer in tracking district populations, contiguity of districts, splits of geographic areas, and compactness of resulting districts (including the provisional plan districts) using well-known peer reviewed measures. In short, GIS software such as Maptitude makes it possible to rigorously follow the traditional districting principles of contiguity, population equality, compactness, respect for political and physical boundaries, and preservation of communities of interest. Software such as Maptitude makes is much easier and more efficient to follow traditional districting principles, and report the results of doing so.

V. Background

39. The Town of Islip is located in the southwestern portion of Suffolk County. It is adjacent to Babylon to the West, Huntington to the West and North, Smithtown to the North, and Brookhaven to the East. Islip's location is shown in Map 1, below.

[14] For an overview of Maptitude software, see https://www.caliper.com/mtredist.htm.

Map 1. Location of Islip Town in Suffolk County, New York.
(Based Upon Census Boundary Files, 2017.)



40. The Town of Islip encompasses four incorporated Villages and all or part of 23 CDPs. The four Villages – Ocean Beach, Saltaire, Bright Waters, and Islandia – perform some local governmental functions. Of the 23 CDPs in Islip, five include areas that extend outside of the boundaries of the Town – Hauppauge, Holbrook, Holtsville, Fire Island, and Oak Beach-Captree. The boundaries of these Villages and CDPs are shown in Map 2, below.

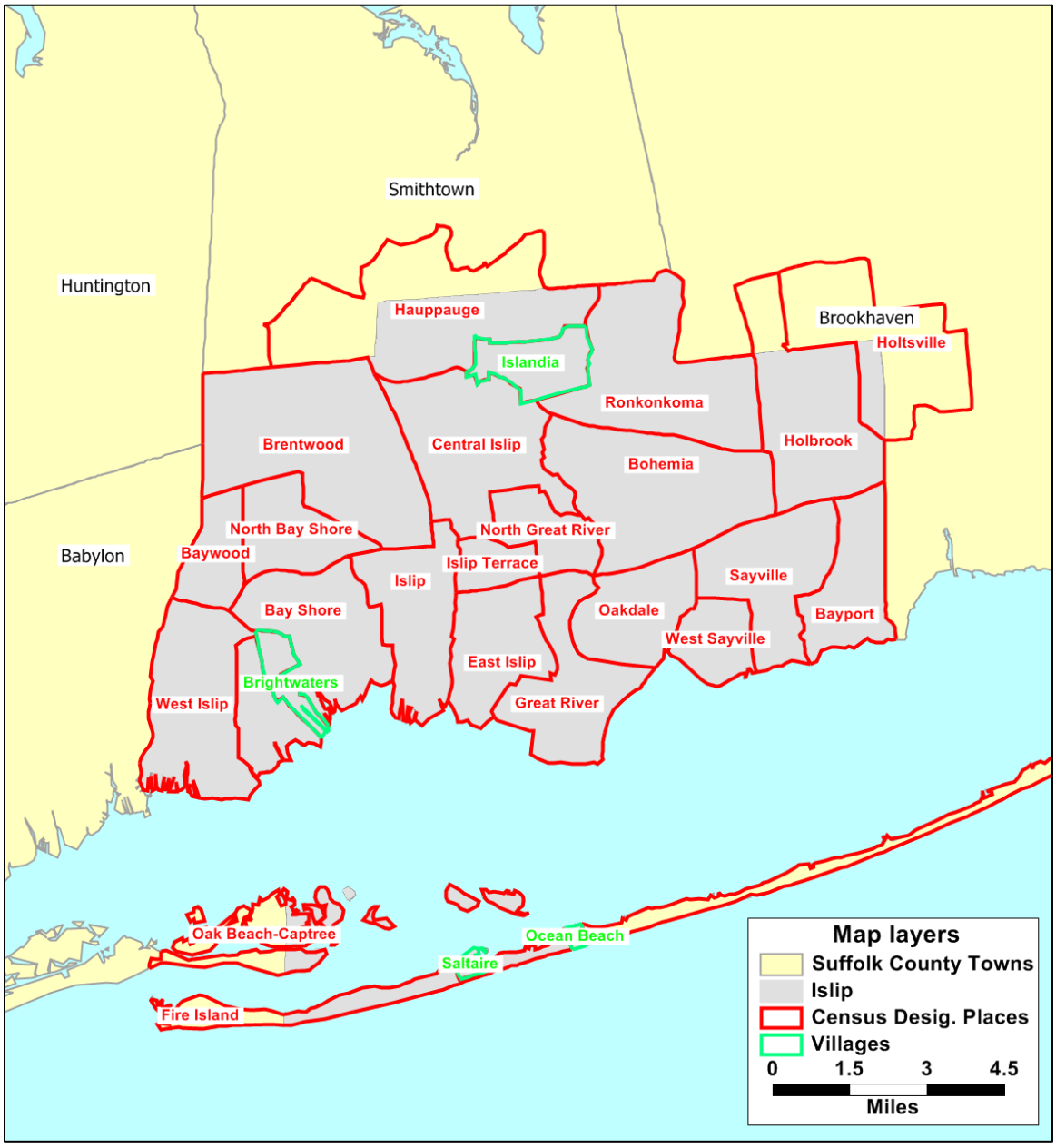
41. Hauppauge, Holbrook, and Holtsville include significant populations both within and outside of Islip;[15] Fire Island has a total population of only 246;[16] and Oak Beach-Captree

[15] According to the 2013–2017 five-year ACS, Hauppauge had a total population of 19,852 of whom 9,508 (47.9%) reside in Islip; Holbrook had a total population of 26,117 of whom 21,322 (81.6%) reside in Islip; and Holtsville had a total population of 20,201 of whom 3,052 (15.1%) reside in Islip. Throughout my analysis, I am only considering the portions of the CDPs that are in the Town of Islip.

[16] According to the 2013–2017 five-year ACS, 96 (39.0%) of Fire Island CDP's residents live in Islip.

has no population within Islip.[17] Exhibit 2 provides detailed information from the 2013–2017 five-year ACS regarding the population and demographics of these Villages and CDPs.

Map 2. Map of Villages and Census Designated Places In or Partially In Islip. (Based Upon Census Boundary Files, 2017.)



[17] Oak Beach-Captree is therefore excluded from further discussion.

42. Although most of the CDPs in Islip have not been incorporated, they have largely remained consistent for many years. Included in Exhibit 3 is the most recent Federal Register Notice regarding CDPs, along with information regarding the various CDPs now designated for Islip. In addition, maps depicting the CDPs boundaries over time are included. It is readily apparent that the CDP boundaries of Brentwood, North Bay Shore, and Central Islip have changed very little from 1980 to 2010.[18]

43. According to Michael Ratcliffe, Assistant Division Chief of Geographic Standards, Criteria, Research, and Quality, for the Geography Division of the Census Bureau, the standards for delineating CDPs are directly related to the following from the Register notice appended in Exhibit 3.

> The CDP name should be one that is recognized and used in daily communication by the residents of the community. Because unincorporated communities generally lack legally defined boundaries, a commonly used community name and the geographic extent of its use by local residents is often the best identifier of the extent of a place, the assumption being that if residents associate with a particular name and use it to identify the place in which they live, then the CDP's boundaries can be mapped based on the use of the name. There should be features in the landscape that use the name, such that a non-resident would have a general sense of the location or extent of the community; for example, signs indicating when one is entering the community; highway exit signs that use the name; or businesses, schools, or other buildings that make use of the name.

44. From this discussion it is plain that the CDPs in Islip represent well defined areas, and that the changes in the CDPs in recent decades have been quite minor, especially when it comes to those of much size or importance. This is especially true of Brentwood, North Bay Shore, and Central Islip. However, CDPs are unincorporated and do not perform any local government functions.

[18] Islandia Village was separated from Central Islip and an unincorporated area was added to Central Islip.

45. The Town Board of Islip is the primary local governmental entity for the vast bulk of the population in the Town. It currently includes the Town Supervisor (the presiding officer) and four Councilmembers, all of whom are elected to four-year terms. Councilmembers' terms are staggered, such that two of the four seats are up for election every two years. Elections occur every other year in odd years. Each elected official is elected at-large by all voters within the Town. The next election for Islip's Town Board is in November of 2019 – two Town Council seats are up for election, but the Town Supervisor's current term continues until 2021.

VI. Islip's Population and Demographics

A. Population and Demographic Trends in the Town of Islip

46. In this section, I analyze trends in Islip's current population and demographics, as well as historical changes dating back through 1980. I have provided analysis based on both five-year ACS files and one-year ACS files, as well as information from decennial censuses where appropriate. While five-year ACS data are helpful in demonstrating trends over time, it should be noted that they do not fully reflect the most current circumstances or the most recent trends because the five-year ACS, by definition, must include older data spanning a five-year period. Thus, I have also relied on data from one-year ACS files to analyze the current circumstances and most recent trends in Islip's demographics, where possible.

47. According to the 2017 one-year ACS, Islip Town had a population of 333,701. According to the 2013–2017 five-year ACS, which is centered around 2015, Islip had a total population of 335,302 (1,801 greater than in the 2017 one-year ACS).

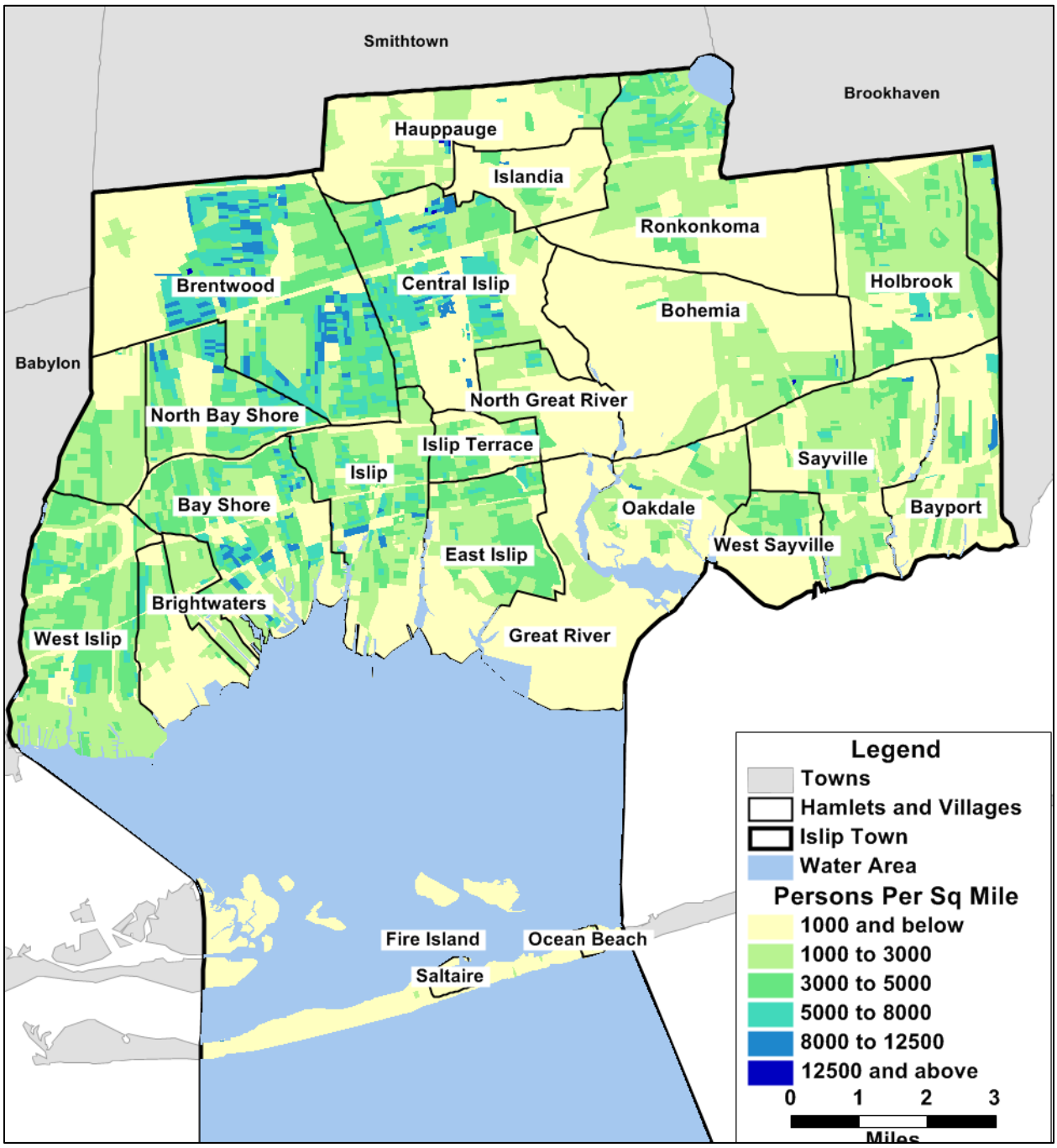
48. According to the 2017 one-year ACS, which is based upon the most recent ACS data available, Islip's CVAP is 25.9% Latino and its total population is 34.5% Latino. According to the 2013–2017 five-year ACS, Islip's CVAP is 20.4% Latino and its total population is 30.8% Latino.

49. Map 3 shows the population density throughout Islip based on the 2013–2017 five-year ACS.

50. Table 1 presents the basic population trends in Islip through a comparison of information from the 2005–2009 and 2013–2017 ACS redistricting files, which center on 2007 and 2015, respectively.[19] Table 1 shows a marked increase in the proportion of Latino CVAP in Islip from 15% to 20.4% across these periods. However, as noted above, the Latino CVAP is 25.9% of Islip's total CVAP according to the 2017 one-year ACS.

[19] As explained above, the 2013–2017 ACS special redistricting file is the most current available file. The 2005–2009 redistricting file was the first such file ever released because the ACS began collecting data in 2005.

Map 3. Population Distribution in the Town of Islip and its CDPs and Villages.



Source: Block data from 2010 Census and Census Boundaries and Features.

Table 1. Racial and Latino Composition of the Town of Islip, 2005–2009 and 2013–2017.

Population Category	ACS 2005–2009		ACS 2013–2017	
Citizens of Voting Age	**218,645**	**100.00%**	**221,830**	**100.00%**
Non-Latino White	160,100	73.22%	146,975	66.26%
Latino	32,785	14.99%	45,340	20.44%
Non-Latino Black	20,430	9.34%	22,795	10.28%
Non-Latino Asian	4,350	1.99%	5,535	2.50%
Non-Latino All Other	980	0.45%	1,185	0.53%
Citizens	**303,515**	**100.00%**	**297,870**	**100.00%**
Non-Latino White	207,290	68.30%	185,120	62.15%
Latino	57,520	18.95%	72,665	24.39%
Non-Latino Black	30,575	10.07%	30,380	10.20%
Non-Latino Asian	6,650	2.19%	7,880	2.65%
Non-Latino All Other	1,480	0.49%	1,825	0.61%
Citizens Under 18	**84,870**	**100.00%**	**76040**	**100.00%**
Non-Latino White	47,190	55.60%	38,145	50.16%
Latino	24,735	29.14%	27,325	35.94%
Non-Latino Black	10,145	11.95%	7,585	9.98%
Non-Latino Asian	2,300	2.71%	2,345	3.08%
Non-Latino All Other	500	0.59%	640	0.84%
Total Population	**336,755**	**100.00%**	**335,310**	**100.00%**
Non-Latino White	210,795	62.60%	187,230	55.84%
Latino	81,635	24.24%	103,245	30.79%
Non-Latino Black	33,355	9.90%	33,020	9.85%
Non-Latino Asian	9,490	2.82%	9,930	2.96%
Non-Latino All Other	1,480	0.44%	1,885	0.56%

Source: ACS Special Redistricting Files, 2005–2009 and 2013–2017

51. Table 1 shows the relative breakdown of Islip's CVAP and non-voting age citizen population, *i.e.* citizens under 18 years old. When one compares the 2005–2009 five-year ACS with the 2013–2017 five-year ACS, the Latino CVAP proportion in Islip has increased as these younger Latino citizens reach voting age and the number of Latinos in Islip increases. In fact, Islip's Latino CVAP has continued to increase since the 2013–2017 five-year ACS (which is centered on 2015), because Islip's total Latino CVAP was 25.9% according to the 2017 one-year ACS. Because the proportion of Latino non-voting age citizens in Islip (about 36%) is greater

than the Latino CVAP proportion (about 20%) according to the 2013–2017 five-year ACS, even without any migration of Latinos into Islip, the proportion of Latino CVAP will continue to grow. In addition, the non-Latino white population and CVAP have steadily declined in Islip, thus further increasing Latino proportions. Given these trends, it is reasonable to expect that Islip's Latino CVAP proportion has continued to increase since the 2013–2017 five-year ACS and the 2017 one-year ACS, and will continue to do so.

52. Table 2 shows the relative increases in the Latino population, CVAP, and non-voting age citizen population from the 2012–2016 to the 2013–2017 five-year ACS files, which are centered on 2014 and 2015, respectively. It is clear that Latino proportions in all categories continue to increase. Indeed, the proportional Latino CVAP increased from almost 19% to almost 20.4% between the two most recent five-year ACS files.

Table 2. Racial and Latino Composition of the Town of Islip, 2012–2016 and 2013–2017.

Population Category	ACS 2012–2016		ACS 2013–2017	
Citizens of Voting Age	**220,280**	**100.00%**	**221,830**	**100.00%**
Non-Latino White	148,920	67.60%	146,975	66.26%
Latino	41,595	18.88%	45,340	20.44%
Non-Latino Black	23,160	10.51%	22,795	10.28%
Non-Latino Asian	5,475	2.49%	5,535	2.50%
Non-Latino All Other	1,130	0.51%	1185	0.53%
Citizens	**297,645**	**100.00%**	**297,870**	**100.00%**
Non-Latino White	187,540	63.01%	185,120	62.15%
Latino	68,805	23.12%	72,665	24.39%
Non-Latino Black	31,585	10.61%	30,380	10.20%
Non-Latino Asian	7,960	2.67%	7,880	2.65%
Non-Latino All Other	1,755	0.59%	1,825	0.61%
Citizens Under 18	**77,365**	**100.00%**	**76,040**	**100.00%**
Non-Latino White	38,620	49.92%	38,145	50.16%
Latino	27,210	35.17%	27,325	35.94%
Non-Latino Black	8,425	10.89%	7,585	9.98%
Non-Latino Asian	2,485	3.21%	2,345	3.08%
Non-Latino All Other	625	0.81%	640	0.84%
Total Population	**335,720**	**100.00%**	**335,310**	**100.00%**
Non-Latino White	189,590	56.47%	187,230	55.84%
Latino	99,740	29.71%	103,245	30.79%
Non-Latino Black	34,430	10.26%	33,020	9.85%
Non-Latino Asian	10,095	3.01%	9,930	2.96%
Non-Latino All Other	1,865	0.56%	1,885	0.56%

Source: ACS Special Redistricting Files, 2012–2016 and 2013–2017

53. The composition of Islip has been changing for several decades, and there is an increasing number of Latino, black, and other residents, and a lower proportion who are non-Latino white. Many of them are of voting age, and many are citizens. Table 3 shows the changing racial composition of the total population of Islip from 1980 through 2017 based on data from one-year ACS files, as well as decennial Census data for years that predate the ACS launch in 2005. The underlying Table is attached as Exhibit 4.

Table 3. Changing Racial Composition of Islip's Total Population

Survey	Non-Latino White	Non-Latino Black	Non-Latino Asian	Latino
1980 Census	85.14%	5.05%	0.74%	**8.79%**
Total population: 298,897	254,479	15,099	2,207	26,256
1990 Census Long-Form	79.14%	6.03%	1.50%	**13.06%**
Total population: 299,587	237,100	18,062	4,508	39,135
2000 Census Long-Form	67.47%	8.48%	1.19%	**20.20%**
Total population: 322,625	217,690	27,370	3,835	65,160
2006 One-Year ACS	62.76%	9.06%	2.50%	**23.88%**
Total population: 326,506	204,906	29,581	8,151	77,957
2010 One-Year ACS	55.58%	8.62%	3.10%	**30.67%**
Total population: 335,796	186,651	28,956	10,415	102,979
2016 One-Year ACS	52.91%	8.43%	3.21%	**33.98%**
Total population: 333,743	176,581	28,130	10,709	113,398
2017 One-Year ACS	52.23%	8.56%	2.42%	**34.53%**
Total population: 333,701	174,303	28,558	8,077	115,233

54. Tables 4 and 5 present the changing racial composition of Islip's VAP and CVAP, respectively. From these data, it is plain that Islip has continued to change and evolve.

Table 4. Race and Latino Composition of Islip's VAP Since 2000.

Survey	Non-Latino White	Non-Latino Black	Non-Latino Asian	Latino
2000 Census Long-Form	69.97%	7.65%	2.01%	**18.68%**
Total VAP: 234,490	164,070	17,930	4,715	43,810
2006 One-Year ACS	64.93%	8.69%	2.85%	**22.56%**
Total VAP: 244,102	158,484	21,217	6,945	55,058
2010 One-Year ACS	57.93%	9.33%	3.20%	**28.41%**
Total VAP: 251,068	145,453	23,431	8,028	71,327
2016 One-Year ACS	55.62%	8.92%	3.37%	**31.28%**
Total VAP: 257,296	143,118	22,956	8,675	80,482
2017 One-Year ACS	54.53%	10.81%	2.72%	**32.51%**
Total VAP: 257,121	140,215	27,789	6,999	83,584

Table 5. Race and Latino Composition of Islip's CVAP Since 2000.

Survey	Non-Latino White	Non-Latino Black	Non-Latino Asian	Latino
2000 Census Long-Form	76.87%	7.56%	1.30%	**12.85%**
Total CVAP: 209,860	161,310	15,870	2,720	26,965
2006 One-Year ACS	72.64%	9.01%	1.67%	**15.61%**
Total CVAP: 214,476	155,799	19,319	3,587	33,479
2010 One-Year ACS	67.36%	9.49%	2.90%	**19.15%**
Total CVAP: 212,533	143,153	20,166	6,155	40,699
2016 One-Year ACS	63.88%	9.69%	2.54%	**22.95%**
Total CVAP: 221,395	141,429	21,457	5,623	50,806
2017 One-Year ACS	60.75%	10.97%	2.38%	**25.91%**
Total CVAP: 228,156	138,613	25,033	5,437	59,124

55. As shown by Tables 1–5, there is currently a substantial Latino total population, VAP, and CVAP in Islip. Moreover, these populations have steadily increased over time in both absolute and relative proportional terms. The Latino CVAP in Islip was 25.9% of the total CVAP according to the 2017 one-year ACS, which is the most current ACS data available.

B. Geographic Distribution of Islip's Population

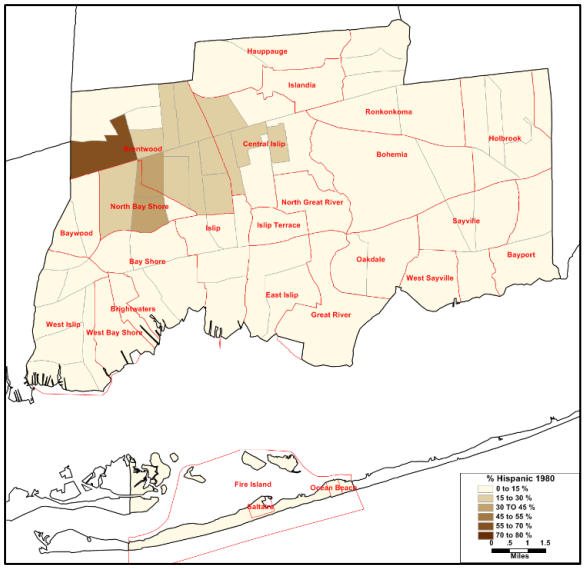
i. Increases in Islip's Latino Population by Geographic Area over Time

56. The increasing proportion of the Latino population in Islip is demonstrated by Maps 4–7 below, which depict the increasing total Latino population in Islip from the 1980 decennial Census through the 2013–2017 five-year ACS at the Tract level. In 1980, there was just one Tract in Islip which was over 55% Latino, and two other Tracts over 40% Latino, all in Brentwood or North Bay Shore. By the 2013–2017 ACS, every Tract in Brentwood or North Bay Shore was over 59% Latino and four Tracts were over 70% Latino.[20] Most of the Tracts in Central Islip also have high concentrations of Latinos.

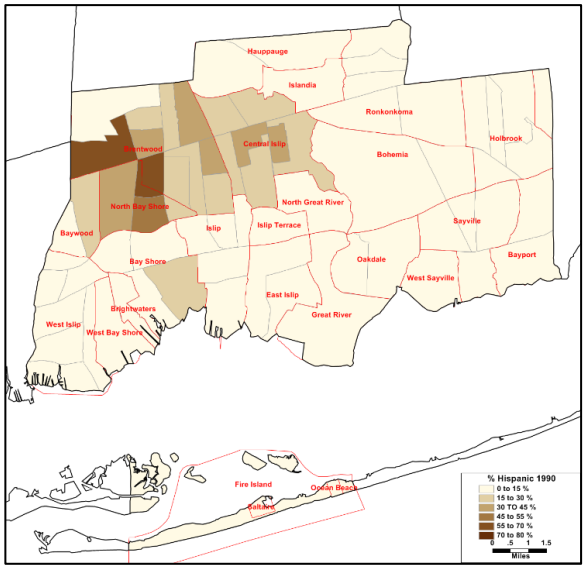
[20] The Tracts used here were the 2010 Tracts with data allocated by Census Block, so that the areas were exactly the same.

Maps 4–7. Latino Population by Census Tract over Time

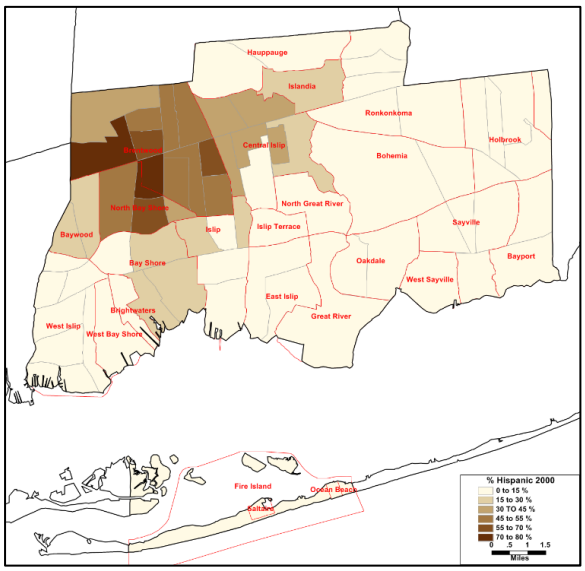
Map 4: 1980 Decennial Census



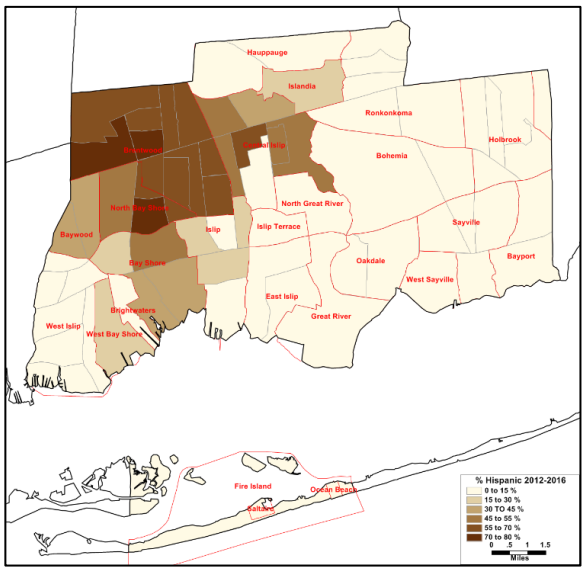
Map 5: 1990 Decennial Census



Map 6: 2000 Decennial Census



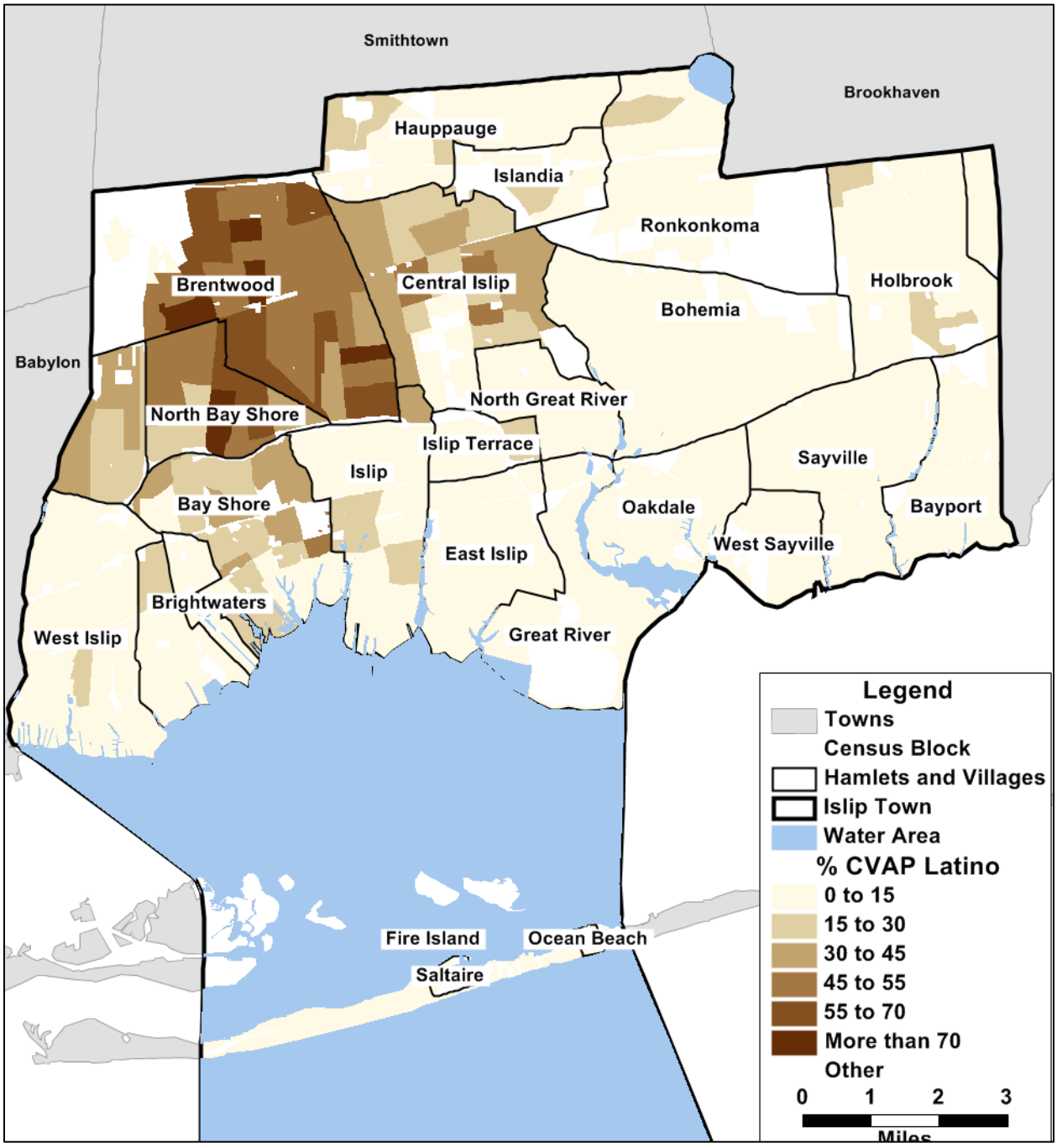
Map 7: 2016–2012 Five-Year ACS



ii. Current Geographic Distribution of Islip's Latino Population

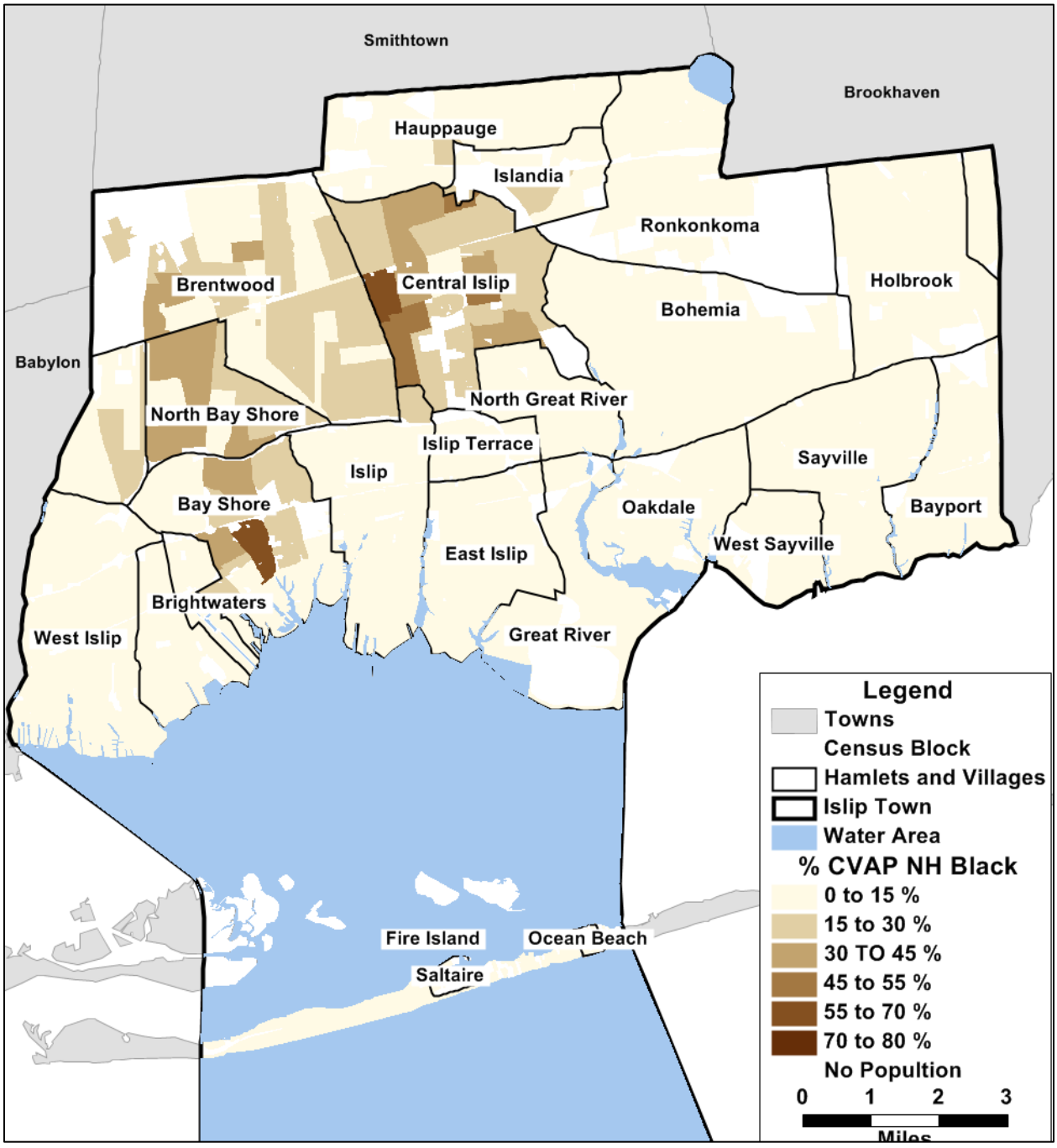
57. The map series below makes it plain that Islip's Latino population is geographically concentrated in the northwest portion of the town – particularly in Brentwood, North Bay Shore, and Central Islip. This is in stark contrast to Islip's non-Latino white population, which is distributed throughout the rest of Islip and constitutes a substantial majority in virtually all other areas. Maps 8–10 show the relative proportion of the total population by geographic area for Latinos, non-Latino African Americans, and non-Latino whites. Maps 8–10 are based on data from the 2013–2017 ACS special redistricting files.

Map 8. Concentration of Latino CVAP Population in the Town of Islip, its CDPs and Villages



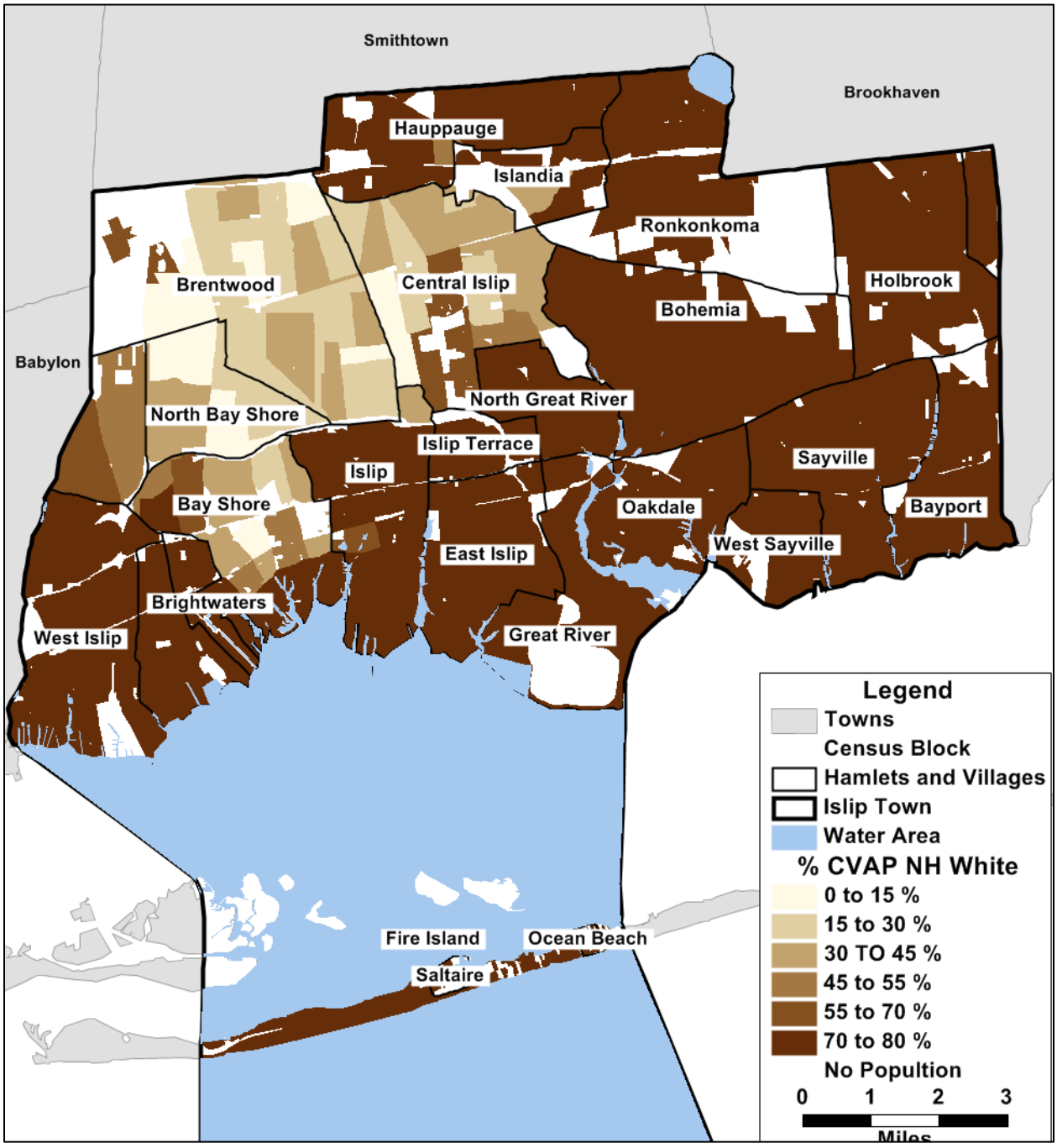
Source: Created by author from ACS 2013–2017 Redistricting Tabulation, Census Boundaries and Features.

Map 9. Concentration of Non-Latino Black CVAP Population in the Town of Islip, its CDPs and Villages.



Source: Created by author from ACS 2013–2017 Redistricting Tabulation, Census Boundaries and Features.

Map 10. Concentration of Non-Latino White CVAP Population in the Town of Islip, its CDPs and Villages.



Source: Created by author from ACS 2013–2017 Redistricting Tabulation, Census Boundaries and Features.

58. As Map 8 makes clear, the substantial Latino CVAP, VAP, and total population in Islip is geographically concentrated in and around Brentwood, North Bay Shore, and Central

Islip. According to the 2017–2013 ACS, Brentwood's total population is 63,115 (66.7% of which is Latino), and North Bay Shore's total population is 21,886 (66.3% of which is Latino). Thus, out of the 85,001 residents of Brentwood and North Bay Shore, 56,571 (or two-thirds), are Latino. Moreover, 45.6% of Central Islip's 33,253 total residents are Latino. Thus, 71,737 out of the 118,254 residents of Brentwood, North Bay Shore, and Central Islip are Latino, for a combined total of 60.7%. Notably, Brentwood and North Bay Shore alone contain more than 25% of Islip's total population, according to the 2013–2017 five-year ACS, and with Central Islip included, the three CDPs contain over 35% of Islip's total population.

59. As shown in Map 10, the relative population of non-Latino whites in these areas is very small, especially in contrast to the substantial proportions of white residents throughout the rest of Islip.

60. Furthermore, given the composition of Islip's younger Latino citizens, the general increase in Islip's Latino population, and the continued decline of Islip's total and proportional white population, I expect that Islip's Latino total population, VAP, and CVAP will continue to increase both absolutely and as a proportion of the total population, VAP, and CVAP. According to the 2017 one-year ACS, Islip's population of citizens under the age of 18 is 39% Latino and only 46.5% non-Latino white.

61. Based on historical and current settlement patterns, these increases will be mostly concentrated in the northwest area of Islip.

VII. Demonstrative Four-District Plans for the Town of Islip

62. Due to the substantial Latino CVAP in Islip that is geographically concentrated in and around Brentwood, North Bay Shore, and Central Islip, drawing a four-district plan that includes one majority Latino CVAP district follows as a natural result of applying traditional districting principles. The traditional districting principles are described below.

63. Maps 11 and 12 show two demonstrative districting plans that illustrate this possibility. First, I explain the traditional districting principles in general. Second, I explain how these traditional districting principles guided my methodology in drawing these demonstrative plans, including necessary tradeoffs between the principles. Third, I provide an analysis of each final districting plan, including quantitative measures that demonstrate compliance with the traditional districting principles. Ultimately, both plans result in one district in which the Latino CVAP constitutes a clear majority of the total CVAP in that district.

A. Traditional Districting Principles

64. Below is a description of the traditional districting principles that I applied in drawing each districting plan. I am familiar with the traditional districting principles and application of such principles based on my extensive experience in drawing districting maps, both within and outside of the judicial context. These principles are commonly applied for both initial drawing of districting plans and evaluating compliance with the Voting Rights Act for districting plans that have already been drawn.

a. ***Population equality.*** Districts within a plan should be roughly equal in population under the overarching principle of one-person one-vote. The usual rule of thumb used is that there should not be total deviation from the average population size of the district of more than 10% considering the largest and smallest districts. This is the guiding principle for all districting plans except Congressional districts, where the standard is absolute population equality.

b. ***Contiguity.*** Contiguity simply requires that the district is one unit, meaning that the entire area of the district is contained within a single, continuous border. This is an absolute standard, except in situations where islands must

be accommodated. Here, Fire Island is remote from the landmass that makes up the bulk of Islip, but must be included in the districting plan.

c. ***Compactness.*** The shape of each particular district must be reasonably compact, as observed visually based on the borders of the district. There are a series of mathematical methods developed to evaluate compactness objectively. As noted below, Maptitude for Redistricting is capable of reporting all of these measures, which either measure aspects of the shape of the district or aspects of the distribution of the population. The most well-known method is the Roeck measure, which compares the area of each district to the area of a circumscribing circle. The measure is calculated by determining the ratio between the area of the district and the area of the circumscribing circle that encircles the district. The various compactness measures are described in Exhibit 6.

d. ***Preserving existing political and geographic subdivisions.*** Both for simplicity of creating ballots and EDs, and to ensure that representation for various levels of government be related to the same area or community, it is important to preserve existing political subdivisions and other delineated geographic borders, to the extent possible. Map drawers avoid crossing boundaries of existing political and other geographic subdivisions, such as CDPs, Census Blocks, and EDs. Map drawers also endeavor to preserve traditional neighborhoods and communities of interest.

65. There often are tradeoffs among these principles, especially between population equality and compactness, and preserving political or other community subdivisions. Sometimes

one must split community or political areas in the interest of minimizing population disparities between districts, or in the interest of compactness. As noted above, Maptitude makes it easy to track district populations, view district borders and their relationship to political and other geographic boundaries, measure compactness, and maintain contiguity.

B. Demonstrative Plans, Methodology Employed, and Final Analysis

66. I was directed by counsel to prepare two demonstrative plans that each contain the entirety of the CDP of Brentwood, to the extent I could do so in a manner consistent with traditional districting principles. I was also directed by counsel to prepare one plan that preserved the boundaries between Census Blocks (the "Census Block Plan") and one plan that preserved the boundaries of EDs (the "ED Plan").[21] The two demonstrative plans are presented in Maps 11 and 12 below. As demonstrated below, a majority Latino CVAP district is possible in both maps.

67. I created and evaluated these maps using 2013–2017 ACS redistricting files.[22]

68. To create these maps, I loaded the appropriate base map into Maptitude and indicated in the Maptitude software that I intend to draw a plan with four districts. Maptitude then computes the target district population and enables the mapmaker to begin drawing district borders. For a four-district plan in Islip, the target population is 83,601[23] for each district, which is 25% of Islip's total population.

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[21] Due to the way in which Census Blocks and EDs are drawn, it is not possible to prepare a map that preserves boundaries between both Census Blocks and EDs. Islip contains 226 EDs (a small number of which do not contain any voters) compared with the 5,444 Census Blocks.

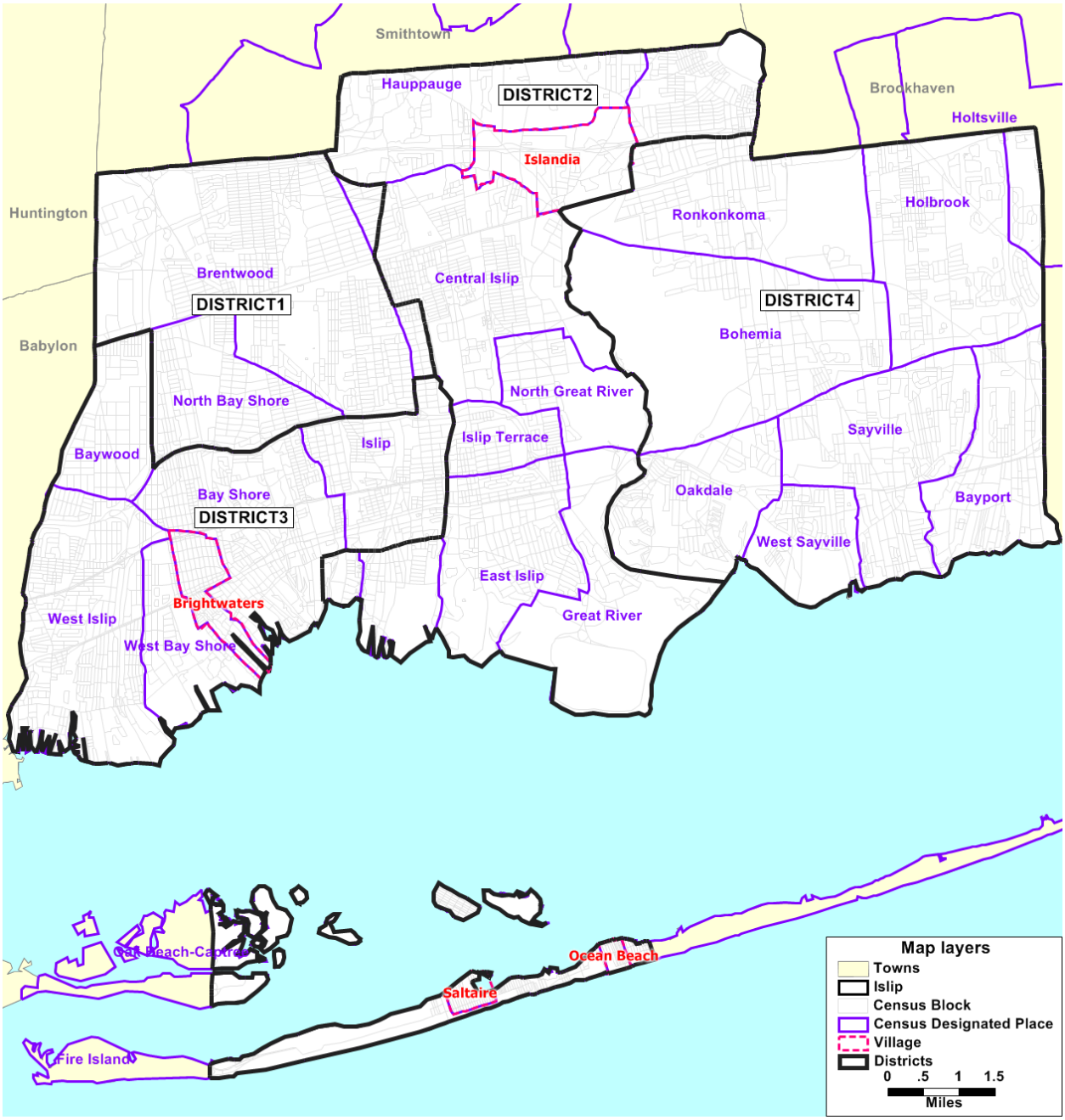
[22] I needed to calculate estimates of the 2013–2017 five-year ACS data at the Block and ED level. This was used to order to allow me to create districts that were approximately equally populated, and was also necessary to allow me to directly evaluate characteristics of the districts, such as citizenship. I did this using the methodology set forth in Appendix 1.

[23] This is based upon the 2010 Census population, which is the only population numbers available for Census Blocks.

69. In order to create district borders, Maptitude offers a districting toolbox that enables the user to assign individual Census Blocks or EDs to a district within the plan, or to make it possible to assign any available geographic area to a district. For instance, one can assign whole CDPs or Villages to a given district. This is a powerful feature in Maptitude that helps preserve boundaries or communities when drawing legislative districts.

i. Plan Based Upon Census Blocks

Map 11. Census Block Plan



Source: Created by Author using Census Boundaries and 2013–2017 ACS Redistricting File.

a. Methodology

70. I began by assigning the CDPs of Brentwood, North Bay Shore, and Central Islip to District 1. This was necessary because neither the population of Brentwood alone, nor the

population of Brentwood and North Bay Shore combined, would have been sufficient to reach the target population for one district. However, the combined populations of Brentwood, North Bay Shore, and Central Islip was much larger than the target population required for a district, so I removed some of the population from District 1 to respect the principle of population equality. From a compactness perspective, it made sense to keep Brentwood and North Bay Shore within District 1 because both are clustered in the northwest corner of Islip. Thus, I had to split Central Islip in order to bring the population of District 1 closer to the target district population. The resulting District 1 is made up of the entire CDPs of Brentwood and North Bay Shore, as well as some portions of Central Islip that are located along its shared border with Brentwood. I then proceeded to create the other three districts, being mindful of the boundaries of Villages and CDPs, and placement of major roads.

71. In preparing this plan, I was guided by adherence to the traditional districting principles. I ensured population equality between each of the districts. I ensured that each district was contiguous. I sought to draw each district in a manner intended to maximize compactness. I sought to preserve preexisting boundaries to the greatest extent possible, and I ensured that I did not split any Census Blocks. I did not use race or racial data in this process of drawing the plan.

72. Once I had completed a preliminary plan, I ran a variety of reports and integrity checks, including contiguity, the number of areas (CDPs and Villages) split, deviations from the target population, boundary cleanliness, and lastly the percentage of various population groups within each district. These reports confirm that the plan is valid.

73. Given that the geographic concentration of the Latino population in Islip is coterminous with the boundaries of several CDPs, drawing a four-district plan that includes one

majority Latino CVAP district follows as a natural result of applying traditional districting principles as described above. As is apparent from Maps 11 and 12, Brentwood and North Bay Shore sit at the core of both iterations of District 1, with slight deviations only as necessary in the interest of population equality or preservation of EDs as the primary geographic unit.

b. Analysis

74. All the major traditional districting principles were followed, as noted above. The results of this plan are summarized in Exhibits 5 and 6. For this plan, only a few CDPs needed to be split, and this was due to the requirement of population equality.

75. ***Population Equality.*** The maximum positive deviation from ideal is 0.79% and the maximum negative deviation is 0.76%, bringing the total population deviation to 1.55%. Considering that the rule of thumb regarding maximum deviations for local districting is 10%, this plan is very close to absolute equality.

76. ***Contiguity.*** All districts are contiguous, with the necessary exception of District 3, which includes Fire Island and other Island portions.

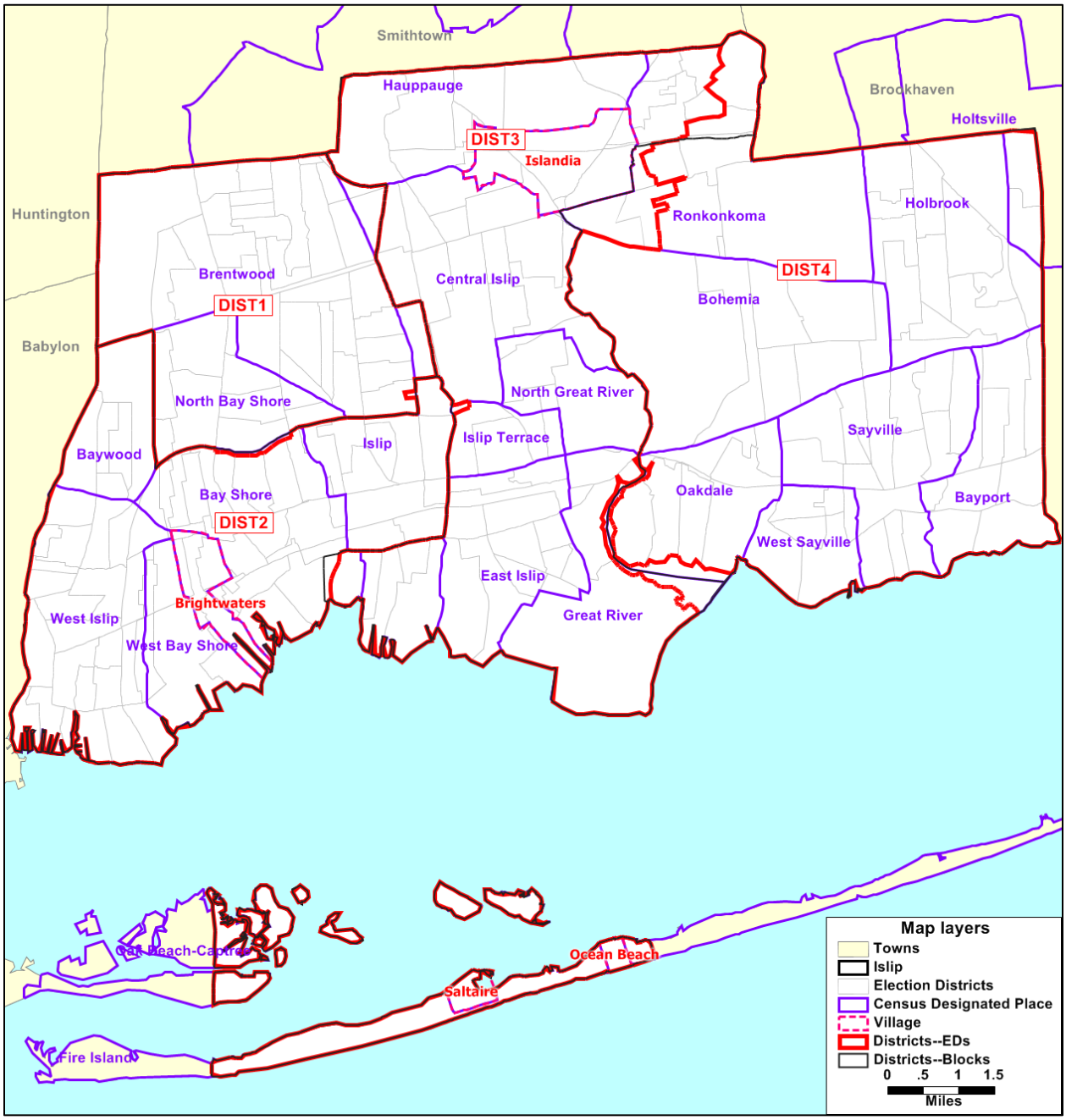
77. ***Compactness.*** Using the Roeck circumscribing circle test, District 1 scores 0.61, which is considered very compact. The only district that would be considered not particularly compact is District 3, which is due to the inclusion of Fire Island and other Island portions of Islip. More extensive measures of compactness of the demonstrative plans are available in Exhibit 6, along with explanations of each measure.

78. ***Preservation of existing political and geographic subdivisions.*** As noted, the CDP of Central Islip had to be split to preserve population equality, while the CDPs of Ronkonkoma and Islip were also split to preserve population equality. Some of the districts necessarily breached the boundaries of EDs in order to preserve Census Block boundaries.

79. Latinos constitute 54.4% of the total CVAP of District 1 in the Census Block plan.

ii. Plan Based Upon EDs

Map 12. ED Plan



Source: Created by Author using Census Boundaries and 2013–2017 ACS Redistricting File.

a. Methodology

80. I used the boundaries in the Census Block Plan as a starting point for the ED Plan. I made slight modifications to the Census Block Plan in order to unify all of the EDs, while continuing to adhere to the traditional districting principles.

b. Analysis

81. The ED Plan is generally similar to the Census Block Plan and yielded similar results.

82. ***Population Equality.*** The total population deviation in this plan is 1.01%. Like the Census Block Plan, this plan is very close to absolute equality.

83. ***Contiguity.*** All districts within the ED Plan are contiguous, with the necessary exception of District 3, which includes Fire Island and other Island portions.

84. ***Compactness.*** Using the Roeck measure, District 1 scores 0.61, which is considered very compact. Like the Census Block Plan, The only district that would be considered not particularly compact is District 3, which is due to the inclusion of Fire Island and other Island portions of Islip. More extensive measures of compactness of the demonstrative plans are available in Exhibit 6, along with explanations of each measure.

85. ***Preservation of existing political and geographic subdivisions.*** Some of the lines necessarily breached the boundaries of EDs in order to preserve Census Blocks. Otherwise, the plan exhibits the same small number of necessarily boundary splits as the Census Block Plan.

86. Latinos constitute 54.4% of the total CVAP of District 1 in the ED Plan.

C. Conclusions Regarding the Possibility of a Majority Latino CVAP District

87. Both the Census Block Plan and the ED Plan have contiguous and compact districts with only slight deviations from the target population. Each plan appropriately avoids splitting of political or other geographic subdivisions, regardless of whether Census Blocks or

EDs are prioritized. With respect to Latino composition, District 1 in both plans is above 54% Latino, based upon the CVAP derived from the 2013–2017 five-year ACS.[24]

88. As explained above, the percent of Latino CVAP has continued to increase in Islip in recent years. Therefore, the Latino CVAP percentages in District 1 in both plans – which is based on the 2013–2017 ACS data, which centers on 2015 – is a conservative estimate.

VIII. Conclusion

89. It is plain that it is possible to create a district that has a majority Latino CVAP in the Town of Islip based upon a four-district plan that complies with traditional districting principles. These demonstrative plans respect either the boundaries that have been delineated for elections districts or the Census Blocks within Islip. Both districts are quite compact using any of the standard measures. The districts of both plans are contiguous, and have minimal deviation from the ideal district population. In short, such a districting plan would afford the large, established and growing Latino CVAP of Islip an opportunity to elect a candidate of their choice, assuming they vote cohesively.

90. The foregoing statistical reporting is based upon my experience and qualifications as a social science and statistical data analyst utilizing data from the sources indicated.

[24] Data is also presented in Exhibit 5 regarding other characteristics of the Latino and racial composition of the two demonstrative plans. The ACS 2013–2017 redistricting file (released February 22, 2019) were used for the estimate of the Latino and racial group percentages. Data were allocated to the Blocks using the methodology set forth in Appendix 1, and the population data are from the 2010 decennial Census. It should be noted that there has been very little overall population change in Islip since the 2010 decennial Census, however, changing distributions of the population may also affect these results. Updates of the population at the Census Block level will not be available until March 2021, based upon the 2020 decennial Census.

Respectfully submitted,

Andrew A. Beveridge

Yonkers, New York

March 1, 2019

Appendix 1. Estimating ACS Five-Year Data at the Block Level or Election District Level

1. Five-year ACS data is available at the Block Group level, but not at the Census Block level or the election district ("ED") level. In the course of my work it became necessary to prepare estimates of certain relevant data contained in five-year ACS data sets at the Census Block level or the ED level.

2. I calculated Census Block level estimates of relevant data from five-year ACS data using a method referred to as "population based allocation." Each Block Group is comprised of a number of Census Blocks. Using population data from the most recent decennial Census, for each Block Group, I calculated the population percentage that corresponded to each Census Block. Then, I allocated relevant data from the five-year ACS for each Block Group to each of the Census Blocks within that Block Group based on the population percentage of each Census Block. This method allowed me to compute estimates of five-year ACS data at the Census Block level. Population based allocation is commonly used by scholars and has been upheld in other cases in which I and others have submitted districting plans.[25]

3. I generally calculated ED level estimates of relevant data from five-year ACS data by simply aggregating relevant data from all of the Census Blocks within each ED, which I calculated using the method described in the above paragraph. Census Blocks are much smaller than EDs: Islip contains 5,444 Blocks and 226 EDs. The vast majority of Census Blocks are contained within a single ED, making this process straightforward. However, some Census Blocks are split between multiple EDs, and in order to incorporate the data from these Census Blocks into the ED level estimates, I used a method referred to as "areal based allocation." For

[25] Logan, Xu & Stults, *Interpolating U.S. Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database*, The Professional Geographer, Vol. 66-3 at 412–20 (2014).

any Census Block that was split between multiple EDs, I allocated the relevant data to each ED based on the areal proportion of that Census Block that was contained within each ED. Areal based allocation is commonly used by scholars and has been upheld in other cases in which I and others have submitted districting plans.[26]

4. At the direction of counsel, I combined ED level census data with ED level election results provided by the Suffolk County Board of Elections and delivered the data to Dr. Michael D. McDonald. I used five-year ACS data that was centered around the year of the election (for example, for the 2013 Islip elections, I used 2011–2015 five-year ACS data, which is centered around 2013).[27]

[26] *Id*.

[27] For more recent elections I used the most current five-year ACS data available at the time.

Appendix 2. Estimate of Latino Voter Registration and Vote Count using Surname Analysis

1. I was directed by counsel to prepare estimates of Latino voter registration and Latino vote count as of the November 2017 general election.

2. I received two files containing lists of all registered voters in Islip from the Suffolk County Board of Elections. One file was from July 2017 and the other was from January 2019. The files included complete Suffolk County voting histories for each voter.

3. I used both these files in order to prepare a complete file of registered voters that were eligible to vote in the November 2017 general election (the "voter file"). I did this by supplementing the July 2017 file with voters from the 2019 file, but not on the 2017 file, who registered up to 25 days before the 2017 general election.[28] The voter file also contained information indicating who had actually voted in the 2017 general election in Islip.

4. I used what is referred to as "surname analysis" to calculate estimates of the number of Latinos in the voter file and the number of Latinos that voted in the November 2017 general election. There have been various approaches to surname analysis. I used two of the most prominent and well-regarded techniques, which led to similar results.

5. The first technique for estimating the number of Latinos was set forth by the Census Bureau (the "Census Bureau Surname Method").[29] The Census Bureau provides a list of 639 surnames that are frequently reported as Latino. This list includes many, but not all, Latino surnames, therefore the Census Bureau paper suggests that the number of "hits" on those names should be multiplied by a factor of between 1 and 1.5 in order to arrive at an estimate of the

[28] New York requires voters to register to vote at least 25 days before an election in order to be eligible to vote in that election.

[29] Word & Perkins, *Building a Spanish Surname List for the 1990's— A New Approach to an Old Problem*, Working Paper No.13, Population Division, U.S. Census Bureau (Mar. 1996).

number of Latinos within a given population. The Census Bureau Surname Method is a reliable and generally accepted method for measuring the approximate number of Latinos within a given population.

6. The second technique for estimating the number of Latinos in a population was set forth by Bernard Grofman and Jennifer Garcia (the "Grofman/Garcia Surname Method").[30] Like the Census Bureau Surname Method, the Grofman/Garcia Surname Method uses a Latino surname list but does not set a specific number of surnames to use. The Grofman/Garcia Surname Method relies on the fact that there will be both Type 1 and Type 2 error in surname matching, *i.e.*, some surnames will mistakenly identify a non-Latino as a Latino, and any surname list will necessarily miss a certain number of Latinos. The proper number of Latino surnames to use for matching is the number that will result in the same rates of Type 1 and Type 2 error. In other words, it will incorrectly classify the same number of non-Latinos as Latinos as it incorrectly classifies Latinos as non-Latinos. The proper number of surnames is determined using a recursive Bayesian technique.

7. I used both techniques to calculate estimates of the number of Latinos in the voter file that were eligible to vote in the 2017 general election and the number of Latinos who actually voted in that election. The results of these analyses are shown in Tables 1 and 2 of this Appendix.

8. At the direction of counsel, I delivered the town-wide data contained in Tables 1 and 2 to Dr. Michael D. McDonald and I delivered the town-wide and PUMA data contained in Tables 1 and 2 to Dr. John Logan.

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[30] Grofman & Garcia, *Using Spanish Surname to Estimate Hispanic Voting Population in Voting Rights Litigation: A Model of Context Effects Using Bayes' Theorem*, Election Law Journal, Vol. 13-3 at 375–93 (2014).

Table 1. Estimates of Latino Registered Voters in Islip, November 2017

Geographic Area	Total Registration	Census Bureau Surname Method		Grofman/Garcia Surname Method
		No multiplier	1.5x multiplier	
All of Islip	215,626	24,719	37,079	30,183
PUMA: 3603309	81,708	3,076	4,614	4,614
PUMA: 3603310	63,493	17,827	26,740	26,740
PUMA: 3603311	70,426	3,816	5,725	5,725

Table 2. Estimates of Latino Voters in the 2017 General Election in Islip

Geographic Area	Total Vote Count	Census Bureau Surname Method		Grofman/Garcia Surname Method
		No multiplier	1.5x multiplier	
All of Islip	62,632	3,722	5,584	4,516
PUMA: 3603309	28,251	770	1,155	934
PUMA: 3603310	11,802	2,288	3,431	2,776
PUMA: 3603311	22,579	665	997	807

Appendix 3. List of Material Relied Upon

1. Census data from the 1980, 1990, 2000, and 2010 decennial Census, including both the complete count and long-form sample. These data are public and widely available. They were originally produced by the U.S. Census Bureau, and are available either online or in CD or DVD form from the Bureau, as well as from many depository libraries. See census.gov for more information.

2. Data from the five-year and one-year ACS files from 2006 through 2017. These data are public and are available for download from the Census Bureau through its American Factfinder System, as well as in other forms.

3. Special ACS redistricting files that include date arrayed in a very useful way that include citizenship and racial and ethnic classification at a variety of geographic levels, most particularly at the Block Group and Tract level. *See* census.gov/rdo.

4. A variety of Census Boundary files from 1980, 1990, 2000, 2010, including other material regarding Islip. These are also available for download from the Census Bureau.

5. Earlier boundaries files created by Minnesota Population Center through their Historical Geographic Information System project, which is funded by the National Science Foundation and the National Institutes of Health. These boundary files are on common base.

6. Election district files created by the GIS Office of Suffolk County, which delineate election district boundaries.

7. Files of election results from the Board of Elections of Suffolk County.

8. Microsoft Excel.

9. SAS, a well-known software program used to run statistical analyses, and organize data.

10. Maptitude for Redistricting the leading GIS software used for redistricting. It includes Census Boundaries and a variety of tools to assist in the drawing and analysis of legislative districts.

11. National Academy of Sciences, Committee on National Statistics, *Benefits, Burdens, and Prospects of the American Community Survey: Summary of a Workshop* (2013).

12. Logan, Xu & Stults, *Interpolating U.S. Decennial Census Tract Data from as Early as 1970 to 2010: A Longitudinal Tract Database*, The Professional Geographer, Vol. 66-3 at 412–20 (2014).

13. Word & Perkins, *Building a Spanish Surname List for the 1990's— A New Approach to an Old Problem*, Working Paper No.13, Population Division, U.S. Census Bureau (Mar. 1996).

14. Grofman & Garcia, *Using Spanish Surname to Estimate Hispanic Voting Population in Voting Rights Litigation: A Model of Context Effects Using Bayes' Theorem*, Election Law Journal, Vol. 13-3 at 375–93 (2014).

Exhibit 1

Exhibit 1

CURRICULUM VITAE **Updated 2/28/2019**

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EDUCATION

1968-73	Yale University (Sociology), M.Phil.1971; Ph.D. 1973
1967-68	Yale University (Econometrics, Economic Theory)
1964-67	Yale College (Economics), B.A. 1967, with honors in economics
1963-64	California Institute of Technology (Freshmen Year, Math, Science)

RECOGNITION AND AWARDS

2018	Best New End User Product, Charleston Advisor Sixteenth Annual Readers' Choice Awards (A Major Reviewer of Digital Products)
2016	*The Threat to Representation for Children and Non-Citizens (Evenwel v. Abbott)* (Report Author and Co-Creator) named Best Law Website by the Webby Awards
2015	*Census Explorer* (Co-Creator) named Webby Honoree in Government
2015	*Social Explorer* (Co-Creator) awarded Gold Medal, Modern Library Award
2014	*Social Explorer* (Co-Creator) named Webby Honoree in Education
2013	*Social Explorer* (Co-Creator) named Outstanding Achievement, Interactive Media Association
2012	*Social Explorer* (Co-Creator) named Publishing Standard of Excellence, Web Marketing Association
2010	*Social Explorer* (Co-Creator) named Outstanding Reference Source by the Reference and Users Services Association of the American Libraries Association
2007	American Sociological Association *Public Understanding of Sociology Award*
2006-pres.	Marquis *Who's Who in the World*
2005-pres.	Marquis *Who's Who in America*

TEACHING EXPERIENCE

2006-2018	Chair, Queens College, Department of Sociology
2002-pres.	Professor, Queens College and Ph.D. Program in Sociology, Graduate School and University Center, The City University of New York
1981-2001	Associate Professor of Sociology, Queens College, and Ph.D. Program in Sociology Graduate School and University Center, The City University of New York
1981-82	Associate Professor of Sociology, Columbia University
1973-81	Assistant Professor of Sociology, Columbia University
1972-73	Acting Instructor, Department of Sociology, Yale University
1969-70	Assistant in Instruction, Department of Sociology, Yale University

RESEARCH APPOINTMENTS

2008-pres.	Executive Committee Member and Affiliate, CUNY Institute for Demographic Research
1987-88	Visiting Researcher, Center for Studies of Social Change, The New School for Social Research
1982-83	Research Associate, Center for the Social Sciences, Columbia University
1980-82	Co-Director, Annual Housing Survey Project, Center for the Social Sciences, Columbia University
1970-72	Research Affiliate, Institute for African Studies (the former Rhodes-Livingstone Institute), Lusaka, Zambia
1965-69	Research Assistant and Programmer, Department of Economics and Economic Growth Center, Yale University

OTHER RELATED ACTIVITIES

2006-pres. Co-Founder (with Ahmed Lacevic) and President, *Social Explorer, Inc.* A web-based map and data service, now distributed by Oxford University Press and Pearson Publishing. Assisted Development of over 200 activities to accompany introductory Sociology, Political Science and History Texts.

1997-pres. President of Andrew A. Beveridge, Inc., a Demographic and Social Science Data Consulting Firm that provides consulting in litigation and other settings. (Cases and other engagements listed below.)

1993-pres. Consultant to the Newspaper Division of *the New York Times.* Work with reporters and editors regarding covering social science and demographic trends. Analyses and data cited over 1,000 times in newspaper. (Selected analyses listed below)

2001-pres. Columnist for the *Gotham Gazette*. Write Demographic Topic on recent trends and news related to social and demographic trends. (Topic Columns listed below.)

PUBLICATIONS

Book

1979 *African Businessmen and Development in Zambia.* Andrew A. Beveridge and A. Oberschall. Princeton N.J. and Guildford, Surrey, United Kingdom: Princeton University Press, 382 pages.

Edited Books

2013 *New York and Los Angeles: The Uncertain Future.* (David Halle and Andrew A. Beveridge, Co-Editors) New York: Oxford University Press. 624 pages; 38 maps, 35 graphs, 27 photos, and 79 tables.

2011 *Cities in American Political History,* (Associate editor) (Editor. Richardson Dillworth), Sage-CQ Press, 760 pages. Named one of *Choice*'s Outstanding Academic Titles of 2012.

Papers and Chapters

2018 "Relating Economic and Demographic Change in the United States from 1970-2012: A Preliminary Examination Using GIS and Spatial Analysis Techniques with National Data Sources."' Andrew A. Beveridge. In Ian Gregory, Don Debats, Don Lafreniere (Eds.) *The Routledge Companion to Spatial History*. Pp. 92-129.

2014 "The Development and Persistence of Racial Segregation in United States Urban Areas: 1880 to 2010." Andrew A. Beveridge. Pp 35-61. In Ian Gregory and Alistair Geddes (eds.) *Towards Spatial Humanities: Historical GIS and Spatial History.* Bloomington, IN: Indiana University Press.

2013 "New York and Los Angeles: The Uncertain Future." David Halle and Andrew A. Beveridge. Pp. 1-30 in *New York and Los Angeles: The Uncertain Future.*

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2013 "Financial, Economic and Political Crises: From Sub-Prime Loans to Dodd-Frank, Occupy Wall Street and Beyond." David Halle and Andrew A. Beveridge. Pp. 154-93 in *New York and Los Angeles: The Uncertain Future.*

2013 "Residential Diversity and Division: Separation and Segregation among Whites, Blacks, Hispanics, Asians, Affluent and Poor." Andrew A. Beveridge, David Halle, Edward Telles, and Beth Leavenworth Default. Pp. 310-42 in *New York and Los Angeles: The Uncertain Future*.

2011 "Avenue to Wealth or Road to Financial Ruin? Home Ownership and Racial Distribution of Mortgage Foreclosures." Elena Vesselinov and Andrew A. Beveridge. In Christopher Niedt and Marc Silver (eds.) Forging *a New Housing Policy: Opportunity in the Wake of Crisis.* Hempstead NY: National Center for Suburban Studies, Hofstra University, pp. 45-55.

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Theory from Chicago, Los Angeles and New York. Minneapolis, MN: University of Minnesota Press, pp. 137-69.

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2009 "How Does Test Exemption Affect Schools' and Students' Academic Performance?" Jennifer L. Jennings and Andrew A. Beveridge. *Educational Evaluation and Policy Analysis*, vol. 31: June, pp. 153-75.

2008 "A Century of Harlem in New York City: Some Notes on Migration, Consolidation, Segregation and Recent Developments." Andrew A. Beveridge. *City and Community* vol. 7:4 pp. 357-64.

2007 "Who Counts for Accountability? High-Stakes Test Exemptions in a Large Urban School District." Jennifer Booher-Jennings and Andrew A. Beveridge. In A. Sadovnik, J. O'Day, G. Bohrnstedt, & K. Borman (eds.) *No Child Left Behind and the Reduction of the Achievement Gap: Sociological Perspectives on Federal Education Policy.* Routledge, Taylor & Francis Group, pp. 77-95.

2006 "Community-Based Prevention Programs in the War on Drugs: Findings from the 'Fighting Back' Demonstration." Leonard Saxe, Charles Kadushin, Elizabeth Tighe, Andrew A. Beveridge, David Livert, Archie Brodsky and David Rindskopf, *Journal of Drug Issues,* vol. 36:2 pp. 263-94.

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2004 "'Bad' Neighborhoods, Fast Food, 'Sleazy' Businesses and Drug Dealers: Relations between the Location of Licit and Illicit Businesses in the Urban Environment." Julie Ford and Andrew A. Beveridge. *Journal of Drug Issues,* vol. 34:1, pp. 51-76.

2003 "Race and Class in the Developing New York and Los Angeles Metropolises: 1940 to 2000." Andrew A. Beveridge and Susan Weber. In David Halle (ed.) *New York and Los Angeles: Politics, Society and Culture, A Comparative View.* University of Chicago Press, pp. 49-78.

2003 "Residential Separation and Segregation, Racial and Latino Identity, and the Racial Composition of Each City." David Halle, Robert Gedeon and Andrew A. Beveridge. In David Halle (ed.) *New York and Los Angeles: Politics, Society and Culture: A Comparative View*. University of Chicago Press, pp. 150-90.

2003 "The Black Presence in the Hudson River Valley, 1790 to 2000: A Demographic Overview." Andrew A. Beveridge and Michael McMenemy. In Myra B. Armestead (ed.) *Mighty Change, Tall Within: Black Identity in the Hudson Valley*. State University of New York Press, pp. 263-80.

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1980 "Organizing 'Running' Records to Analyze Historical Social Mobility." Andrew A. Beveridge, George R. Hess and Mark P. Gergen. In Joseph Raben and Gregory Marks (eds.), *Data Bases in the Humanities and Social Sciences*. Amsterdam and New York, North-Holland Publishing Company, pp. 157-64.

1977 "Social Effects of Credit: Cheshire County, New Hampshire: 1825-1860." Andrew A. Beveridge. *Regional Economic History Research Center Working Papers*, Autumn, pp. 1-33.

1974 "Economic Independence, Indigenization and the African Businessman: Some Effects of Zambia's Economic Reforms." Andrew A. Beveridge. *African Studies Review*, vol. 17:3, pp. 477-92.

Maps

2011 "Charles Burnett’s Los Angeles, Circa 1970: The City” and “Charles Burnett’s Los Angeles, Circa 1970: His Neighborhood." Andrew A. Beveridge. In Robert E. Kapsis (ed.), *Charles Burnett Interviews.* Jackson, MS, University of Mississippi Press, in folio between p. 94 and p. 95.

Web Based Materials

2005-- *Social Explorer.* A system for retrieving, mapping, charting and graphing Census data from 1790 to present and other data. Co-Creator with Ahmed Lacevic and Social Explorer Team.

2013-15 *Census Explorer*. Visualizations of Census Data. People Education and Income Edition, Commuting Edition, Retail Edition, Population Estimates Edition, Young Adults: Then and Now Edition, and 2010 Census Participation Rate Edition. Co-Creator with Ahmed Lacevic and Social Explorer Team and US Census Bureau. Young Adults: Then and Now Edition. Co-Created with Minnesota Population Center and US Census Bureau. Winner Webby Honoree for Government, 2015.

Invited Pieces and Columns

Gotham Gazette Demographic Topic Columns: January 2001-2013.

"New York's Changing Electorate: What It Means for the Mayoral Candidates" Jun 16, 2013
"New Plan for City Council Districts" (November 16, 2012) (Christian Salazar and Andrew A. Beveridge)
"Proposed City Council District Map Protects Incumbents" (November 15, 2012)
"The Attempt to Kill the ACS" (July, 2012)
"10 Years Later: Enumerating the Loss at Ground Zero" (September 10, 2011)
"Under a Different Name Census Data is Ready for Perusal" (August 11, 2011)
"Failure of Redistricting Reform Could Bring Reprise of 2002's Fiasco" (June 16, 2011)
"Census Wounded City's Pride but Probably Got the Numbers Right" (April 26, 2011)
"Census Brings Unpleasant Surprise for State Politicians" (January 04, 2011)
"Census Likely to Offer Accurate Count of New Yorkers" (September 16, 2010)
"Census Could Set Off Major Redistricting in State" (February 25, 2010)
"New York's Now Beleaguered Financial Workforce" (August 2009)
"New York and the Fight Over the 2010 Census" (February 2009)
"The Senate's Demographic Shift" (November 2008)
"A Shift in Albany Could Avert Higher Rents" (October 2008)
"An Affluent, White Harlem?" (August 2008)
"The School Divide Starts at Kindergarten" (June 2008)
"Housing Squeeze Shows No Sign of Easing" (May 2008)
"A Religious City" (February 2008)
"Will the 2010 Census 'Steal' New Yorkers?" (December 2007)
"The End of 'White Flight'?" (November 2007)
"Feeling the Effects of a Housing Bust" (September 2007)
"No Quick Riches for New York's Twentysomethings" (June, 2007)
"Women of New York City" (March, 2007)
"Stuyvesant Town and Peter Cooper Village, Then and Now" (September, 2006)
"What New Yorkers Are Like Now" – First Results of the American Community Survey" (August 2006)
"Hitting the 9 Million Mark" (June, 2006)
"New York's Asians" (May, 2006)
"Undocumented Immigrants" (April, 2006)
"Transit Workers/Transit Riders; Beginning Lawyers Are Richer; 9 Million New Yorkers?" (March 2006)
"Teachers in NYC's Institutions of Higher Learning" (January, 2006)
"Hispanics and the Ferrer Candidacy" (December, 2005)
"Disabled in New York City; Also: Is The City Still Booming?" (November 2005)
"Who Can Afford to Live in New York City?" (October 2005)
"Can NYC "Profile" Young Muslim Males?" (August 2005)
"Upstate and Downstate – Differing Demographics, Continuing Conflicts" (July, 2005)
"Living at Home after College" (June, 2005)
"Four Trends That Shape The City's Political Landscape" (May 2005).
"High School Students" (April, 2005)
"New York's Responders and Protectors" (March, 2005)
"Who Got the Death Penalty" (February, 2005)

"Wall Street Bonus Babies" (January, 2005)
"New York Lawyers: A Profile" (December, 2004)
"Bush Does Better and Other Election Results In NYC" (November, 2004)
"New York's Creative Class" (October, 2004)
"Portrait of Same-Sex (Married) Couples" (September 2004)
"New York City Is a Non-Voting Town" (August 2004)
"New York's Divided Afghans" (July 2004)
"Flaws in the New School Tests" (June, 2004)
"Why Is There A Plunge In Crime?" (May 2004)
"Estimating New York City's Population" (April, 2004)
"The Passion for Religion Ebbs" (March, 2004)
"Imprisoned In New York" (February, 2004)
"Who Are NYC's Republicans?" (January 2004)
"Five Hidden Facts about Housing--An Analysis of Data from the Housing and Vacancy Survey" (December, 2003)
"Young, Graduated and in New York City" (October, 2003)
"Back To (Public and Private) School" (September, 2003)
"The Vanishing Jews" (July, 2003)
"The Affluent of Manhattan" (June, 2003)
"How Different Is New York City From The United States?" (May 2003)
"The Poor in New York City" (April, 2003)
"Eight Million New Yorkers? Don't Count On It" (March 2003)
"Does Archie Bunker Still Live in Queens?" (February 2003)
"Is There Still A New York Metropolis?" (January 2003)
"City of the Foreign-Born" (December, 2002)
"Can The US Live Without Race?" (November 2002)
"New York's Declining Ethnics" (October 2002)
"A Demographic Portrait of the Victims in 10048" (September, 2002)
"Manhattan Boom" (August, 2002)
"GOP Senate Majority Repeals Census 2000" (July, 2002)
"Changing New York City" (June, 2002)
"The Census Bureau's Bad Estimates" (May, 2002)
"The Boom 1990's?" (April 2002)
"Segregation" (March, 2002)
"Non-Legal Immigrants" (February, 2002)
"Counting Muslims" (January, 2002)
"The Arab Americans in Our Midst" (September, 2001)
"A White City Council" (August, 2001)
"Counting Gay New York" (July, 2001)
"Redistricting" (June, 2001)
"Politics and the Undercount" (May, 2001)
"False Facts about Census 2000" (April, 2001)
"Eight Million New Yorkers!" (March 2001)
"Redefining Race" (February, 2001)
"Census Bureau Finds 830,000 'Extra' New Yorkers" (January 2001)

Other:

2013 "The Two Cities of New York: Wealth, Poverty, and Diversity in the Big Apple." *ASA Footnotes*, February p. 1.
2007 "Four Trends Shaping the Big Apple." *ASA Footnotes*, February, p. 1.
1996 "Sociologists: Eyes Open for Trends in New York City." *ASA Footnotes*, January, p. 1.
1996 "Stroll the Upper East Side for Lifestyles of the Elite." *ASA Footnotes,* March, p. 1
1988 "Credit to the Community: American Banking's Tribal Roots." *Thesis* (Spring), pp. 18-23.
1976 "African Businessmen in Zambia." *New Society,* 35:702: pp. 599-601.

Book Reviews

2012 "Social Theory Two Ways: John Levi Martin's Structures and Actions" Review of *Social Structures* and *The Explanation of Social Action. Historical Methods Historical Methods: A Journal of Quantitative and Interdisciplinary History, 45:4, 179-182.*
1995 *The Assassination of New York.* Robert Fitch. *Contemporary Sociology*, vol. 24: March, pp. 233-34.

1990 *Doing Deals: Investment Banks at Work*. Robert G. Eccles and Dwight B. Crane. *Contemporary Sociology*, vol. 19: May, pp. 186-87.

1988 *The End of Economic Man? Custom and Competition in Labor Markets*. David Marsden. *Contemporary Sociology,* vol. 17: March, pp. 172-73.

1988 *Techno crimes: The Computerization of Crime and Terrorism*. August Beqaa. *Society*, vol. 25: May/June, pp. 87-88.

1985 *The Economic Basis of Ethnic Solidarity: Small Business in the Japanese American Community*. Edna Bonacis and John Modell. *American Journal of Sociology*, vol. 90: January, pp. 942-45.

1979 *Oneida Community Profiles.* Constance Noyes Robertson. *Business History Review*, vol. 53: Autumn, pp. 277-78.

1978 *Urban Man in Southern Africa.* C. Cleff and W.C. Pendleton (eds.) *African Studies Association Review of Books*, vol. 4, pp. 25-26.

1977 *Colonialism in Africa, 1870-1960 Volume Four: The Economics of Colonialism*. Peter Duignan and L.H. Gann (eds.) *Business History Review*, vol. 51: Autumn, pp. 382-85.

1976 *The Quality of American Life: Perceptions, Evaluations, and Satisfactions.* Angus Campbell, Philip Converse, and Willard L. Rogers (Eds.). *Political Science Quarterly*, vol. 91: Fall, pp. 529-31.

1976 *Corporate Power in an African State: The Political Impact of Multinational Mining Companies in Zambia*. Richard L. Skylar. *African Studies Association Review of New Books*, vol. 2, pp. 53-55.

Reports

2000 *Fighting Back Household Survey, Interim Report of 1995-1999 Findings.* David Livert, Charles Kadushin, Leonard Saxe, Andrew A. Beveridge, David Rindskopf, Elizabeth Tighe, Jennifer Hoffman, Saul Kellner, Ricardo Barrera's and Julie Ford.

1997 *Fighting Back Evaluation Interim Report: Wave II General Population*. Survey David Livert, Charles Kadushin, Leonard Saxe, Andy A. Beveridge, David Rindskopf, Elizabeth Tighe, Jennifer Hoffman, Saul Kelner, Ricardo Barreras and Julie Ford.

1997 *Monitoring Archival Indicators of Alcohol and Other Drug Harm: A Fighting Back Progress Repor*t. Andrew A. Beveridge, Elizabeth Tighe, Mary Jo Larson, David Rindskopf, David Livert, Susan Weber, Charles Swartz, John McKenna, Charis Ng and Leonard Saxe.

1997 *Social Trends in North America:* Andrew A. Beveridge, Vivian Brachet, Lorne Tepperman and Jack Veugelers. Prepared for the State of the Environment Report of the Consortium for Environmental Cooperation, Montreal, Quebec.

1996 *Fighting Back Program Interim Report,* Leonard Saxe, Emily Reber, Charles Kadushin, Andrew A. Beveridge, Mary Jo Larson, David Rindskopf, David Livert, Joe Marchese, Michael Stirrat and Susan Weber.

1994 *Black and White Property Tax Rates and Other Homeownership Costs in 30 Metropolitan Areas: A Preliminary Report.* Andrew A. Beveridge and Jeannie D'Amico. Queens College of the City University of New York, Department of Sociology, Program for Applied Social Research.

1994 *An Analysis of Black and White Income Differences: Queens County and the United States.* Andrew A. Beveridge and Jeannie D'Amico. Queens College of the City University of New York, Department of Sociology, Program for Applied Social Research.

1992 *Patterns of Residential Segregation in New York City, 1980-1990: A Preliminary Analysis.* Andrew A. Beveridge and Hyun Sook Kim. Queens College of the City University of New York, Department of Sociology, Program in Applied Social Research.

1988 *Integrating Social Science Workstations into Research and Teaching: Final Report to IBM.* Andrew A. Beveridge and Lauren Seiler. Queens College of the City University of New York, Department of Sociology.

1984 *Changing Lifestyles and Newspaper Reading: An Exploratory Study of Younger Adults*. Andrew A. Beveridge and Albert E. Gollin. Newspaper Readership Project, Newspaper Advertising Bureau.

1978 Social Effects of Time of Use Pricing of Electric Power: A Sociological Approach. Andrew A. Beveridge. Electric Power Research Institute

SELECTED RECENT PRESENTATIONS

Presentations of Scholarly Work

2019 Andrew A. Beveridge, "Nobel Prize Winners, Immigration, New York City and Foreign Roots." Presented at the Annual Meeting of the American Association for the Advancement of Science, Washington, DC, February, 14-17.

2017 Andrew A. Beveridge and Shige Song. "Is it Still the Economy Stupid? A Spatial Regression Analysis of the 2016 Presidential Election Using the American Community Survey Data and Other Materials." Presented at the 2017 American Community Survey, Users Group Conference, Alexandria, VA, May 11-12

2014 Andrew A Beveridge, "Four Mayor, Two Thugs and Governor Moonbeam: New York and Los Angeles Compared" American Sociological Association, Annual Meeting, San Francisco, August 16-19

2013 Ahmed. Lacevic, Andrew A. Beveridge, and Sydney. Beveridge. "New Directions in Visualization for Web Based Historical GIS." Presented at the Annual Meeting of the Social Science History Association, November 21-24, Chicago, IL

2012 Elena Vesselinov and Andrew A. Beveridge. "Racial/Ethnic Typology, Occupational Structure and Mortgage Foreclosures in Neighborhood Context." Annual Meeting of the American Sociological Association, August, 17 to 20, Denver, CO

2012 "Studying Disparate Impact in Housing." National Research Council, Committee for National Statistic. Workshop, June 14 and 15, Washington, DC. Presentation Summarized in *Benefits, Burdens, and Prospects of the American Community Survey: Summary of a Workshop.* (National Academies Press, Washington, DC. 2013)

2012 "The Genesis of Crisis: "looting" by lenders, default by profligate borrowers, or government housing incentives." Annual Meeting, Eastern Sociological Society, February 23 to 26, New York City.

2011 Elena Vesselinov and Andrew A. Beveridge. "Foreclosures, Subprime Loans and the Neighborhood Effects of Race and Class in Detroit and Phoenix." Annual Meeting of the American Sociological Association, Las Vegas, NV, August 23.

2011 Andrew A. Beveridge and Elena Vesselinov. "From Chicago to Las Vegas? The Housing Bubble, Ethnic Communities, Social Class and the Effects of Mortgage Foreclosures." Annual Meeting of the American Sociological Association, Las Vegas, NV, August 22.

2011 "The Demographics of Boom and Bust: New York and LA Metros, 1990 to 2011." Annual Meeting of the American Sociological Association, August 20, Las Vegas, NV.

2011 "How Do Current Districts Stack-Up." The Redistricting Puzzle: The Shifting Sands of Population and the Electorate: Changes in New York. CUNY Graduate Center. May 5.

2011 "Displacing Hope: Hope VI and the Destruction of Housing for Poor Families." Annual Meeting of the Urban Affairs Association, March 16-19, New Orleans, LA.

2011 "2010 Census: Research Issues and Opportunities." Panelist. Annual Meeting of the Eastern Sociological Society, Philadelphia, PA, February 26.

2011 "The Effects of Foreclosure on Educational Performance." Annual Conference of the Sociology of Education Association. Asilomar Conference Center Pacific Grove, California. February 18-20, 2011.

2010 "The Origins of the "Bubble" and the Financial Crisis 2008: "Looting" by Lenders or Default by Profligate Borrowers." Andrew A. Beveridge. Annual Meeting of the Social Science History Association, November 18-21, Chicago, IL.

2010 "Success in Cumulative Voting Systems." Andrew A. Beveridge and Robert Smith. Annual Meeting of the Social Science History Association, November 18-21, Chicago, IL.

2010 "Avenues to Wealth or Roads to Financial Ruin? Homeownership and the Distribution of Mortgage Foreclosures. Elena Vesselinov and Andrew A. Beveridge. Annual Meeting of the American Sociological Association, August 15, Atlanta, GA.

2010 "Teacher Effectiveness on High- and Low-Stakes Tests," Corcoran, Sean P., Jennifer L. Jennings, and Andrew A. Beveridge. Presented at the Institute for Research on Poverty Summer Institute, University of Wisconsin – Madison, June.

2010 "Social Effects of Foreclosures in New York and Los Angeles Metros, a Preliminary Analysis. Andrew Beveridge and Elena Vesselinov. Eastern Sociological Society Annual Meeting, Boston, MA. March 18-21.

2010 "Homeowners No More: A First Look at the Foreclosure Crisis's Effects on Neighborhoods and Communities across the United States." Andrew Beveridge and Elena Vesselinov. Eastern Sociological Society Annual Meeting, Boston, MA. March 18-21.

2009 "Foreclosure Patterns and Demographic Trends in the Los Angeles and New York Metros." Presented at the Annual Meeting of the Social Science History Association. Long Beach, CA. November 12-15.

2009 "Cities: What the Classics Can Tell Urbanisms Today." Panel Presentation, Annual Meeting of the Social Science History Association, Long Beach, CA. November 12-15.

2009 "Reflecting on Efforts to Build Communities of Teachers, Learners, and Researchers using Web 2.0 Tools." Panel Presentation at the Annual Meeting of the American Sociological Association, San Francisco. August 8-11.

2009 "Sociologists and the Media: Developing Positive Relationships between Journalists and Academia." Workshop Presentation at the Annual Meeting of the American Sociological Association, San Francisco. August 8-11.

2008 "Religious Adherents and the 2000 Presidential Election: A Spatial Analysis." Presented at the Social Science History Association 2008 Annual Meeting, Miami, Florida, October 24-26.

2008 "Segregation Revisited: The Growth and Dispersal of Black, Latino, Immigrant and Ethnic Populations in United States Metropolitan Areas since 1950" Presented at Historical GIS 2008. University of Essex, UK. August 21-22.

2008 "Teacher Effects on High and Low-Stakes Tests," Jennifer L. Jennings and Andrew A. Beveridge. Annual Meeting of the American Education Research Association, New York, NY, March 25-28.

Selected Presentations Regarding *Social Explorer*

2014-19 American Sociological Association, Annual Meetings, Research Poster, Various Venues.

2014 National Science Foundation, March 25, Arlington, VA

2014 US Census Bureau, March 26, Suitland, MD

2014 American Association of Public Opinion Research, June 23, DC Chapter, Washington, DC3

2014 Bureau of Labor Statistics, June 23, Washington, DC.

2013 American Sociological Association, Annual Meeting, Research Poster, Annual Meeting, San Francisco, August 16-19

2013 National Science Foundation NSF Course Curriculum and Laboratory Improvement Program/Transforming Undergraduate Education in Science Conference and at NSF Atrium Presentation, January 23-25, Washington, DC.

2012 American Sociological Association, Annual Meeting, Research Poster, August 17-20, Denver, CO.

2011 American Sociological Association, Annual Meeting, Research Poster, August 21, Las Vegas, NV.
American Library Association, Annual Meeting, Oxford University Press, Booth, June 25, New Orleans, LA.
Center for Geographical Analysis, Harvard University, 2011 Conference, May 6 and 7, Cambridge, MA.
CUNY Journalism School, Ethnic Community and Media Census Training, May 5, New York, NY.
American Association of Public Opinion Research, New York Chapter, April 21, New York, NY.
Population Association of America, Pre-Conference Session, March 30, Washington, DC.
National Low Income Housing Coalition, Annual Conference, March 29, Washington, DC.
Census Bureau, Geography Division, January 28, Washington, DC.
National Science Foundation NSF Course Curriculum and Laboratory Improvement Program/Transforming Undergraduate Education in Science Conference and at NSF Atrium Presentation, January 26-28, Washington, DC.
CUNY Journalism School, Making Sense of the Census, January 3, New York, NY.

2010 Social Science History Association, Annual Meeting, "Exploring Long Term US Change: Research and Teaching with Social Explorer," November 18, Chicago, IL.
Jewish Community Relations Council, Community Connections Fellowship Orientation, New York, November 9.
U.S. State Department, Office of International Visitors. "Changing Demographics and Multiculturalism in the United States." Flushing, NY, September 21.
American Sociological Association, Annual Meeting, Research Funding Opportunities and Data Resources Poster, August 15, Atlanta, GA.

2009 American Sociological Association, Annual Meeting, Research and Data Support Poster, August 8-11, San Francisco, CA.
Eastern Sociological Association, Annual Meeting, Research Workshop, April 2-5. Baltimore, MD.

2008 American Sociological Association, Annual Meeting, Research and Data Support Poster, August 2, Boston, MA.

2007 New York Chapter of the American Association of Public Opinion Research, October 4, New York, NY.
American Sociological Association, Annual Meeting, Research and Data Support Poster, August 12, New York, NY.
Coalition for the National Science Foundation, U.S. House Office Building Reception, Official Representative of the American Sociological Association, Washington, DC, June 26,.
Pew Research Center, Washington, DC, June 25.

2006 National Center for Supercomputing Applications, Invited Conference on Spatial Thinking in the Social Sciences and Humanities," December 18-19, Urbana, IL.
Annual Meeting of the Social Science History Association, "Social Explorer as a Resource for Teaching," November 2-5, Minneapolis, MN.
Annual Meeting of the American Sociological Association, Research Workshop, "Geographical Information Systems (GIS) as a Research Tool for Sociologists," August 11-14, Montreal, Quebec.
Annual Meeting of American Sociological Association, Research and Data Support Poster, August 11-14, Montreal, Quebec...
National Center for Supercomputing Applications, Invited Conference on Spatial Thinking in the Social Sciences and Humanities, December 18-19, Urbana, IL.

GRANTS AND AWARDS

Grants and Awards in Progress

"Census Analyses for the New York Metropolitan Area." *New York Times* Newspaper Division and CUNY Center for Advanced Technology, 1993-pres. Renewed 9/2018 to 8/2021 ($317,563)

Grants and Awards Completed

"INSPIRE: Studying and Promoting Quantitative and Spatial Reasoning with Complex Visual Data Across School, Museum, and Web-Media Contexts" Leilah Lyons, Josh Radinsky (University of Illinois Chicago) and Andrew A. Beveridge (Social Explorer, Inc.) . National Science Foundation, Tues-Type 2 Project, Information Technology Research, Discovery Research K-12, Cyberlearning: Transforming Undergraduate Education, Inspire Geography and Spatial Sciences. 2012 to 2016, $795,000 Total, $242,000 Sub-Contract to Social Explorer.

"Creating and Disseminating Tools to Teach with Demographic Data Maps and Materials." Andrew A. Beveridge and Josh Radinsky, National Science Foundation, Division of Undergraduate Education, 2009-2013, $332,896

"Integrated Public Use Microdata Sample Redesign." Subcontract through University of Minnesota from National Institutes of Health R01, 2006-2013 $175,000.

"Collaborative Research—The National Historical Geographic Information System." National Science Foundation, Sociology Program, 2007-2012, $99,725 (Continuing Award).

"The Distribution and Social Impact of Mortgage Foreclosures in the United States." Andrew A. Beveridge and Elena Vesselinov, National Science Foundation, Sociology Program, 2009-2010, $144,995.

"Collaborative Research—Creating Exemplary Curricula and Supporting Faculty Development in Using Social Explorer to Teach with Demographic Data Maps." Andrew A. Beveridge and Joshua Radinsky, National Science Foundation, Division of Undergraduate Education, CCLI, Phase 1, 2006-2008, $149,970.

"Collaborative Research—A Digital Library Collection for Visually Exploring United States Demographic and Social Change." Andrew A. Beveridge and David Halle, 2002-2007, $706,746.

"National Historical Geographical Information System." John Adams, Andrew A. Beveridge, et al, Subcontract of National Science Foundation Infrastructure Grant through University of Minnesota, Organize Historical City Based Data, 2001-2006, $194,000.

"Using Socio-Economic Characteristics of Residents of Student Neighborhoods as a Proxy for Socio-Economic Characteristics of Students: An Assessment Using ECLS-K." National Center for Education Statistic through Educational and Statistical Services Institute, 2004-2005, $57,958.

"Adding Census 2000 Data and Geographic Location to the ECLS-K Data Set" Andrew A. Beveridge and Sophia Catsambis, National Center for Education Statistic through Educational and Statistical Services Institute, 2002-2003, $59,335.

"Visualizing and Exploring United States Urban and Rural Social Change, 1790-2000: Interactive Multimedia and Web Based Tools." Andrew A. Beveridge and David Halle, National Science Foundation, Division of Undergraduate Education, Educational Materials Development, 2001-2004, $418,000.

"Evaluation of Fighting Back." Leonard Saxe, Charles Kadushin, Andrew A. Beveridge, Robert Wood Johnson Foundation, 1994-2002, $370,000.

"Development of a Map and Demographic Data Server," CUNY Software Institute, 2001, $8,000.

"Redistricting and Minority Voting Rights in Metropolitan New York." Randolph McLaughlin and Andrew A. Beveridge, 2000-2001, Pace Law School $90,000 total; Andrew A. Beveridge $60,000.

"Mapping and Exploring New York City Change, 1905-2000: A Set of Interactive Web Based Tools." National Science Foundation, 1999-2000, $78,960.

"A Laboratory for Integrating Multimedia and World Wide Web Technology into Sociological Instruction." Samuel Heilman, Robert Kapsis, Max Kilger, Dean B. Savage and Andrew A. Beveridge, National Science Foundation, 1996-1998, $47,846.

"A Shared Computer Work Station and Storage System for Social Science Research." National Science Foundation, 1996-1997, $20,964.

"The Battle for Yonkers and the Dilemma of Desegregation." Presidential Research Award, 1993-1994, One Term Release.

"Why Do Neighborhoods Change or Stay the Same?" Ford Foundation, Diversity Initiative Grant. 1993, Course Release and Student Stipends.

"Separate American Dreams Face the Common American Dilemma: The Battle to Segregate Yonkers, New York, 1940-1990." Profession Staff Congress, Research Award Program, 1992-1994, $6,800.

"Using the Census for Social Mapping across the Sociology Curriculum." President's Mini-Grant for Innovative Teaching, 1992-1993, $3,500.

"Modeling the Results of Union Elections by Developing Standard and Hierarchical Logistical Models." Diane Poland, Andrew A. Beveridge, and Wing-Shing Chan, Probe Program for Grand Challenges in the Social Sciences, National Center for Supercomputing Activities, 1992-1994, Super-Computer Time at National Center.

"The Introductory Sociology Curriculum Initiative: An Empirical, Scientific Approach." Andrew A. Beveridge, Joanne Miller, Lauren H. Seiler and Dean B. Savage, National Science Foundation, Undergraduate Course and Curriculum Program, 1992-1995, $160,000.

"A Computer Laboratory for Quantitative and Scientific Reasoning in Sociology." Andrew A. Beveridge, Joanne Miller, Dean Savage and Lauren H. Seiler, National Science Foundation, Instructional Instrumentation and Laboratory Program, 1991-1994, $50,825.

"Socially Mapping the New York Area." Ford Diversity Initiative Grant, 1992, Course Release Time.

"Development of Research Mentorship and Laboratory in Sociology." CUNY Dean for Research and Academic Affairs, Department Faculty Development Program, 1991-1992, One Course Release Time.

"Integrating Yonkers." Faculty-In-Residence Award, 1988-1989, One Course Release Time.

"Credit Allocation and Community Change." Professional Staff Congress CUNY, Faculty Fellowship, 1987, $6,200.

"Credit Allocation and Community Change." Professional Staff Congress CUNY, Research Award Program, 1986-1988, $13,268.

"A Study of Industrial Development of an Agricultural Community Based Upon Financial Records: Keene and Cheshire County, New Hampshire, 1820-1915." Putnam Foundation, 1985-1988, $33,000.

"The Intelligent Work Station in Social Science Research: Development, Evaluation, Instruction and Demonstration." Lauren Seiler and Andrew A. Beveridge, International Business Machines Corporation, Special Study, 1985-1987, $78,000 of hardware and software, $17,000 funding.

"Integrated Software for the Social Research Workstation." Andrew A. Beveridge and Lauren Seiler, Inter-University Consortium for Educational Computing, 1985-1986, $20,000.

"A Study of the Industrial Development of an Agricultural Community." National Endowment for the Humanities Grant, Basic Research Program, 1984-1985, $75,000.

"Credit Allocation and Community Change." Professional Staff Congress CUNY, Research Award, 1984-1985, $6,973.

. "Credit Allocation and Community Change." Professional Staff Congress CUNY, Research Award, 1983-1984, $6,928.

Andrew A. Beveridge and Phoebus J. Dhrymes, "Longitudinal Transformation and Analysis of the Annual Housing Surveys." Department of Housing and Urban Development, 1980-1982, $248,000.

"Credit and Social Change: Cheshire County and Its Provident Institution, 1832-1915." American Council of Learned Societies, Fellowship, 1978-1979 $13,500.

"The Context of Credit in Wilmington, Delaware, 1800-1870." Regional Economic History Research Center, Eleutherian Mills Hagley Foundation, Grant and Fellow, 1978-1979, $12,000.

"Societal Effects of Credit Allocation." National Science Foundation Sociology Program Research Grant, 1976-1978, $81,781.

"Social Structure, Social Change and Credit Allocation: A Case Study." National Endowment for the Humanities Summer Stipend, 1976, $2,000.

"Social Structure, Social Change and Credit Allocation: A Case Study." American Philosophical Society, Grant, 1976, $750.

"African Businessmen in Zambia: Economic, Social and Governmental Impact." Foreign Area Fellowship Program Fellowship, 1970-1971, $11,400.

Pre-Doctoral Research Grant. National Institute of Mental Health, 1969-1972, Stipend and Tuition.

OTHER SOCIOLOGICAL RESEARCH ACTIVITIES

Selected Analyses Appearing in *New York Times* and Elsewhere

Since 1992, Professor Beveridge, Queens College Sociology, and Social Explorer have been cited over 1,000 times in the New York Times, and materials have been syndicated or appeared elsewhere. Other media appearances include NPR, WCBS, WABC, WNBC, WNYW, CUNY-TV, CBS Radio, and the Associated Press.

“Chicago’s Murder Problem.” *The New York Times*, May 27, 2016. By Ford Fessenden and Haeyoun Park.

“How Every New York City Neighborhood Voted in the Democratic Primary?” *The New York Times,* April 19, 2016. By Matthew Bloch and Wilson Andrews.

"In Chelsea, A Great Wealth Divide.” *The New York Times,* October 25, 2015. By Mireya Navarro.

"Move Over Millennials, Here Comes Generation Z.” *The New York Times,* September 20, 2015. By Alexis Williams.

"Ten Years After Katrina.” *The New York Times,* August 26, 2015. By Campbell Robertson and Richard Fausset

"We're Making Life Too Hard for Millennials,” *The New York Times,* August 2, 2015. By Steven Rattner.

“Why the Doorman Is Lonely.” *The New York Times*, January 11, 2015. By Julie Stow

“Ceding to Florida, New York Falls to No. 4 in Population.” *The New York Times*, December 24, 2014. By Jesse McKinley

“Gap between Manhattan’s Rich and Poor Is Greatest in U.S., Census Finds.” *The New York Times*, September 18, 2014. By Sam Roberts

“Mostly White Forces in Mostly Black Towns: Police Struggle for Racial Diversity.” *The New York Times*, September 10, 2014. By Shaila Dawan

“No MetroCard Needed.” *The New York Times*, May 25, 2014. By Michelle Higgins

“The Three-Seat Strollers,” April 10, 2014 - By Hannah Seligson

“Racial Patterns Are Found in Recent School Budget Elections.” *The New York Times*, August 25, 2010, Pg. A19. By Sam Roberts.

“In New York, Black and Hispanic Strongholds Become More White. *The New York Times*, December 15, 2010; Pg. A17, By Sam Roberts. (Maps Pg. A17)

“Immigrants Make Paths To Suburbia, Not Cities. *The New York Times*, December 15, 2010 Pg. A15. By Sabrina Tavernise and Robert Gebeloff. (Maps Pg. A1, A16)

"Economic Boom in Washington Leaves Gaping Income Disparities. *The New York Times*, December 18, 2010, Pg. A11. By Sabrina Tavernise and Robert Gebeloff; Sabrina Tavernise.

"A Slice of Queens Where People Who Arrived in 1977 Are Newcomers." *The New York Times,* January 8, 2011 Pg. A15. By Joseph Berger.

"Black? White? Asian? More Young Americans Choose All of the Above. *The New York Times*, January 30, 2011, Pg. A1. By Susan Saulny.

"Smaller New Orleans After Katrina, Census Shows." *The New York Times,* February 3, 2011. By Campbell Robertson. (Includes maps and graphics.)

"For City Parents, a Waiting List for Nearly Everything." *The New York Times*, February. 22, 2013, By Soni Sangha.

"A Survey of the Flooding in N.Y.C. After the Hurricane." *The New York Times*, Nov. 21, 2012.

"New York Led Country in Population Growth Since 2010 Census." *The New York Times*, June 28, 2012. By Sam Roberts.

"BIG CITY--Offspring Who Cling To the Nest." *The New York Times*, June 24, 2012 - By Ginia Bellafante.

"100 Years Of Staying Put." *The New York Times*, April 27, 2012 - By Benjamin Weiser and Noah Rosenberg.

"Born Abroad, Well Off and Using Public Schools." *The New York Times*, February 14, 2012. By Kirk Semple.

"Solo in America" .*The New York Times*, February 5, 2012 - By Bill Marsh and Amanda Cox.

"Detroit Census Figures Confirm A Grim Desertion Like No Other." *The New York Times*, March 23, 2011 Wednesday, Pg. A1. By Katharine Q. Seelye.

"Non-Hispanic Whites Are Now a Minority in the 23-County New York Region." *The New York Times*, March 28, 2011, Pg. A19. By Sam Roberts.

"Cougars Aren't Mythical." *The New York Times*, October 15, 2009, Pg. C1. By Sarah Kershaw.

"Five-Year-Olds at the Gate: Why are Manhattan's elementary schools turning away kindergartners? How the Bloomberg administration missed the baby boom it helped create." *New York Magazine*, June 1, 2009. By Jeff Coplon.

STUDIES CONNECTED WITH LEGAL CASES

Legislative Districting and Redistricting (Including Plans for Jurisdictions and for Community Groups)

Center for Law and Social Justice, Medgar Evers College and Newman, Ferrara. *Favors v. Cuomo, et al.,* U.S. District Court for the Eastern District of NY (Hearing Testimony, 2012).

Frederick Brewington and Randolph McClaughlin, *Melvin Boone, et al., vs. Nassau County Board of Legislators, et al*. U.S. District Court for the Eastern District of New York. Produced report and plan and testified in trial regarding redistricting of Nassau County Legislature. 2011

Westchester County Board of Legislators, Plan for Redistricting Westchester County, Adopted May 17, 2011.

City of New Rochelle. Plan for Redistricting City Council Districts. Adopted May 10, 2011.

United States Department of Justice. *United States v. Port Chester.* U.S. District Court for the Southern District of New York. Investigation, Voting Analysis, Analysis of Potential Plans, Reports and Declarations, Testimony, 2002-2009. Cited in Opinion.

Emery, Celli, Curti, Brinkerhoff and Abadi. *Rodriguez v. Pataki.* U.S. District Court for the Southern District of New York. Reports, affidavits, deposition testimony and trial testimony related to claims about the State Senate Redistricting Plan in New York State, 2002-2004. Decided.

Randolph McClaughlin, Esq. *New Rochelle Voter Rights Committee, et al vs. New Rochelle, et al*. U.S. District Court for the Southern District of New York. Plaintiff's redistricting plan, affirmation, report, trial testimony, negotiated redistricting plan, settlement hearing testimony, 2003-2005. Decided and Settled.

Frederick Brewington, Esq., *Montano v. Suffolk County Board of Legislators*. U.S. District Court for the Eastern District of New York. Produced report and plan and testified in trial regarding proposed redistricting of Suffolk County Legislature. Cited in District Court Opinion, 2003. Decided.

City of Yonkers. Plan for the Redistricting the City Council. Adopted June 24, 2003.

Center for Constitutional Rights and Social Justice Center, Pace University Law School. *Goosby v. Town Board of Hempstead.* U.S. District Court for the Eastern District of New York. Designed and presented plaintiff's plan for districting the Town of Hempstead, a community of 720,000. Created single member district plan using census data and boundary files. Submitted plan including maps and data and testified at trial. Court ordered plan; affirmed by 2nd Circuit; Supreme Court denied certiorari. Plan and testimony cited in District Court and 2nd Circuit opinions. 1995-1997.

Connecticut Civil Liberties Union. *Coalition for Fair Representation, et al v. City of Bridgeport, et al.* U.S. District Court for the District of Connecticut. Analysis of segregation patterns in Bridgeport Connecticut. Affidavit and maps filed. Cited in 2nd Circuit Decision. 1993-1994.

Berger, Poppe, Janiec. *Diaz, et al v. City of Yonkers*. U.S. District Court for the Southern District of New York. Prepared redistricting plan for the Yonkers City Council, met with plaintiffs and defendants and in court. Plan accepted by City Council and District Court. 1992-1993.

Housing Discrimination, Affirmative Steering, Rent Stabilization and Affordability, etc.

Covington and Burling and Washington Lawyers' Committee for Civil Rights and Urban Affairs. *Adrian Borum, et al v. Brentwood Village, LLC, et al.*, United States District Court for the District of Columbia. 2016-present (Report, Declaration, and Deposition.)

Anti-Discrimination Center. *Janell Winfield et al v. The City of New York et al*. Case Number 15-cv-5236. United States Court for the Southern District of New York. 2017-- (Preliminary Report, Declaration).

Relman, Dane and Colfax, *Westchester Residential Opportunities, Inc., et al v. Clinton Terrace LP, et al.*. Case Number 7:16-CV-09273-VB, 2017 (Report).

Bierman and Associates. *Akagi v. Turin HDFC et al*, United States Court for the Southern District of New York. 2016-Present (Report Deposition, Rebuttal Report.)

New York State Attorney General .*Eric T. Schneiderman, As Attorney General of the People of the State of New York v. Evans Bancorp, Inc. et al*. United States District Court for the Western District of New York. 2014-2015 (Report, Settled 2015)

United States Department of Justice. *United States* v. *City of New Orleans*, Case No. 12-cv-2011. United States District Court for the Eastern District of Louisiana. 2013-2014. (Report and Deposition, Settled 2014)

United States Department of Justice. *City of Joliet, v.Mb Financial Bank, N.A, et al, and United States v. City of Joliet* United States District Court for the Northern District of Illinois. Report and Deposition, Trial Testimony, 2012-2013. United States Department of Justice. Settled.

United States Department of Justice. *United States v. St. Bernard Parish.* United States District Court for the Eastern District of Louisiana. Report. Settled.

Disability Rights California**.** Analysis of Proposed City Council Group Home Zoning Law in Los Angeles. Report and Letter. 2012.

Relman and Dane. *Ex rel. Curtis Lockey, et al v. City of Dallas, et al., 3:11-CV-354-.* United States District Court for the Northern District of Texas. Two Reports. Dismissed. 2012-2013.

Marin Goodman, LLP. *Fair Housing Justice Center, Inc., et al, v. Silver Beach Gardens Corporation, et al.* United States District Court for the Southern District of New York. Report and Deposition, 2011.

Foley and Lardner and U.S. Department of Justice. *MSP Real Estate, Inc., et al., v. City of New Berlin, et al.*, and *United States v. City of New Berlin,* U.S. District Court for the Eastern District of Wisconsin; Report, 2011. (Settled 2011.)

Foley and Lardner. *Bear Development LLC v. City of Kenosha and Redevelopment Authority of the City of Kenosha,* U.S. District Court for the Eastern District of Wisconsin. Report and Deposition Testimony, 2011. (Settled 2011.)

Hofstra University, School of Law, Law Clinic. *Isidoro Rivera, et al v. Incorporated Village of Farmingdale, et al*. U.S. District Court for the Eastern District of New York. Report. 2009-2014. Settled.

Skadden, Arps, Slate, Meagher & Flom. *Fair Housing in Huntington Committee, et al v. Town of Huntington, New York, et al.* U.S. District Court for the Eastern District of New York. Report and Rebuttal Report. 2010. (Decided 2010.)

South Brooklyn Legal Services. *Barkley v. United Homes LLC. et al.,* U.S. District Court for the Eastern District of New York, Report, Deposition and Trial Testimony. 2009-2011. (Jury Verdict 2011.)

Relman and Dane. *Anti-discrimination Center of Metropolitan New York v. County of Westchester, et al.* U.S. District Court for the Southern District of New York. Report, Rebuttal Report and Deposition Testimony, 2008-2009. (Settled 2009.)

Sullivan & Cromwell. *Vargas, et al v. Town of Smithtown.* U.S. District Court for the Eastern District of Long Island. Report. 2008. (Settled 2008.)

Southern New Jersey Legal Services. *Mount Holly Gardens Citizens in Action, Inc., et al v. Township of Mt. Holly, et al*. U.S. District Court for the District of New Jersey. Declaration, 2008 and 2010. (Summary Judgment Reversed by 3rd Circuit, Certiorari Pending))

The Advancement Project. *Anderson, et al v. Jackson, et al.* U.S. District Court for the Eastern District of Louisiana. Report and Deposition re: Public Housing Demolition in New Orleans, 2007. (Decided 2007).

Three Rivers Legal Services and Southern Legal. *Helene Henry, et al v. National Housing Partnership.* U.S. District Court for the Northern District of Florida, Gainesville, Division. Three reports and deposition Testimony. 2007-2008. (Settled 2008.)

Legal Services of Southern New Jersey. *Bergen Lanning Residents in Action, et al. vs. Melvin R. "Randy" Primus, et al.* Superior Court of New Jersey, Law Division, Camden County Report re: Bergen Square Redevelopment in Camden, NJ. 2005. (Decided 2005.)

Legal Services of Southern New Jersey. *Cramer Hill Residents Association, et al. vs. Melvin R "Randy" Primus, et al.* Superior Court of New Jersey, Law Division, Camden County. Report re Cramer Hill Redevelopment in Camden, NJ. 2005. (Decided 2005.)

Legal Services of Southern New Jersey. Citizens In Action, et al. vs. Township of Mount Holly, et al. Superior Court of New Jersey, Law Division, Burlington County. Report and Certification re: Redevelopment of the Gardens in Mount Holly. 2005. (Decided 2005.)

Legal Services of Southern New Jersey. *Hispanic Alliance, et al. vs. City of Ventnor, et al.* Superior Court of New Jersey, Law Division, Atlantic County Report and Testimony re: Ventnor Redevelopment. 2005. (Settled 2005.)

Legal Services of New Jersey. *Connie Forest, et al vs. Mel Martinez, et al.* Superior Court of New Jersey, Law Division, Essex County. Report re: Brick Towers Demolition in Newark. 2003-2006. (Decided 2006.)

Legal Services of Southern Florida*, Reese v. Miami-Dade County Housing Authority*, Analysis of Relocation of Public Housing Tenants. U.S. District Court for the Southern District of Florida. Report and Testimony at Trial. Cited in District Court Opinion. 2001-2003, and 2009. (Decided 2003, 2009.)

City of Long Beach, *Walton v. City of Long Beach*. Analyzed the vacancy rate in the City of Long Beach for 1992 through 2000. Filed affidavits in state and federal court. Testified in proceedings. Carried out various studies related to vacancy rate. 1997-2000. (Decided 2000, Reversed by Appellate Court.)

Arnold and Porter. *Witt, et al v. New York State Board of Elections.* Analyzed those who have two or more domiciles where they regularly reside for case involving voting in more than one local election. 2000-2002. (Decided 2002.)

Coral Ortenberg Zeck and Condispoti. *Village of Spring Valley v. Town of Clarkstown.* Analyzed the affordability of housing in Rockland County New York for a case involving the annexation of a parcel to build such housing. Testified at trial. 2000. (Decided 2000.)

United States Justice Department, Civil Rights Division. *United States vs. Tunica Mississippi School District.* Analyzed proposal to build a new school near the Casino development in Tunica Mississippi, which was desegregated by order in 1971. 1999-2000. (Decided 2000).

New York City Environmental Justice Alliance. *New York City Environmental Justice Alliance, et al. v, Rudolph W. Giuliani, et al.* Filed an affidavit that analyzed the racial and Hispanic distribution of the various community gardens for sale and not-for-sale in New York City in 1999. Decided, Cited in the 2nd Circuit opinion.

Connecticut Civil Liberties Union, Center for Children's Advocacy, NAACP Legal Defense Fund, and the Puerto Rican Legal Defense and Educational Fund. *Sheff v. O'Neil.* Analyzed the changing patterns of school enrollments in the Hartford area for this landmark case. Supplied a series of exhibits used by plaintiffs. 1998. (Decided.)

Connecticut Civil Liberties Union and National Association for the Advancement of Colored People. *NAACP v. Milford.* Analyzed historical housing and segregation patterns in the Milford region, and provided disparate impact analysis for not providing low-income housing as agreed. 1997-1998. (Settled 1997.)

Connecticut Civil Liberties Union and Puerto Rican Legal Defense Fund. *Pitts v. Hartford.* Analyzed placement of low-income public housing tenants in wake of destruction of public housing. Case settled. 1997.

American Civil Liberties Foundation of Maryland. *Carmen Thompson, et al. vs. U.S. Department of Housing and Urban Development, et al.* Analysis of various proposed plans for the relocation of public housing tenants throughout the Baltimore metropolitan area. Created a series of maps and analyses. Prepared trial testimony. Consent Decree Entered, April 1996.

Gurian and Bixon; Davis, Polk and Wardwell. Open Housing Center, Inc. vs. Kings Highway Realty, a Division of Provenz Realty Corp.; Provenz Realty Corp; Diane Provenz; Evelyn Cannon; and Barbara Noonan. Analyzed real estate "tester" data and apartments that various clients were shown. Imputed racial status of clients by using GIS techniques. Prepared affidavit. Cited in judge's opinion denying summary judgment. 1994-1996. (Settled, 1996.)

Westchester Legal Services and Sullivan and Cromwell. Carol Giddins, et al v. U.S. Department of Housing and Urban Development, et al. Analyzed various proposed plans to end racial steering of Section 8 tenants to South West Yonkers. Maps and analyses incorporated into consent decree, and still in use in placing tenants. 1992-1994 and continuing.

Metropolitan Action Institute. Analysis of Housing Segregation Patterns in Yonkers, New York and Starrett City, Brooklyn, 1983-1984. (Materials Used for Testimony of Paul Davidoff.)

Federal Court Jury System Challenges (All Cases Decided.)

Andrea Hirsch, *Martinez v. Kelly.* U.S. Appeals Court for the Second Circuit. Analyzed effects of peremptory challenges for *habeas corpus* petition. 2006-2007.

Stern Shapiro Weissberg & Garin. *United States v. Darryl Green, et al.* U.S. District Court for the Eastern District of Massachusetts. Analyzed jury selection system for using Census data, local lists and other materials. Filed seven declarations and testified twice. 2004-2006.

Federal Public Defender, Eastern District of LA, New Orleans, LA. *United States v. Torres*. Analyzed jury selection system for the Eastern District of Louisiana based upon Census Data and Estimates, as well as filings in the Eastern District. Declaration filed. 2006.

Federal Public Defender, Eastern District of LA, New Orleans, LA. *United States v. Caldwell*. Analyzed jury selection system for the Eastern District of Louisiana based upon Census Data and Estimates, as well as filings in the Eastern District. Declaration filed. 2006.

Federal Public Defender, Western District of PA, Pittsburgh. *United States v. Lawrence Skiba*. Analyzed jury selection system for the Pittsburgh Division of the Western District of Pennsylvania based upon Census Data and Estimates, as well as filings in the Western District. Affidavit filed. 2004.

Federal Public Defender, Western District of PA, Pittsburgh. *United States v. Minerd*. Analyzed jury selection system for the Pittsburgh Division of the Western District of Pennsylvania based upon Census Data and Estimates, as well as filings in the Western District. Affidavit filed. 2002.

Federal Public Defender, Western District of PA, Erie, PA. *United States v. Rudolph Weaver.* Analyzed jury selection system for the Pittsburgh Division of the Western District of Pennsylvania based upon Census Data and Estimates, as well as jury lists and voting. Affidavit Submitted 2001, Testified.

Newman Schwartz and Greenberg. *United States v. Albert J. Pirro, Jr*. Filed affidavit that analyzed representation in master jury wheel for White Plains and Foley Square Court Houses in the Southern District using census data with respect to the dilution of Italian Americans likely to be on a jury, if venue changed from White Plains to Foley Square. Venue change motion was denied. 2000.

Polstein, Ferrara, Dwyer and Speed and Stephen P. Scaring. *United States v. Dennis McCall, Trevor Johnson.* Analyzed representation in master jury wheel for White Plains Court House in the Southern District. Filed affidavit, which was cited in judge's opinion. 1998.

Curtis, Mallet-Prevost, Colt and Mosle, *United States v. Don King and Don King Productions.* Analyzed representation in master jury wheel for New York City Courthouse in the Southern District. Affidavit and Consulting. 1997-1998.

Dominick Porco. *United States v. Kevin Veale.* Analyzed representation in master jury wheel for White Plains Court House in the Southern District. Filed affidavit. 1997.

Diarmuid White, *United States v. Jose Reyes, et al.* Analyzed representation in master jury wheel for New York City Courthouse in the Southern District. Report and testimony in case cited in the judge's opinion. 1996.

State Court Jury System Challenges (All Cases Decided.)

Joseph Flood and Steven Malone. State of Arkansas v. Daniel Pedraza Munoz, Declaration. 2013.

Fitch Richardson, *Commonwealth of Virginia v. Prieto.* Fairfax County Virginia Circuit Court. Affidavit and Trial Testimony, 2010.

Capital Defenders Office, Atlanta GA. *State of Georgia vs. Jason McGhee.* Forsyth County Georgia State Court. Trial Testimony, 2010.

Public Defenders Office and Joseph Flood, *Commonwealth of Virginia v. Sanchez*. Prince William County Virginia Circuit Court. Analyzed Jury Selection in Prince William County, VA. Affidavit, 2008.

Ferrell Law, *Commonwealth of Virginia v. Alan*. Prince William County Virginia Circuit Court. Analyzed Jury Selection in Prince William County, VA. Affidavit, 2008.

New Hampshire Public Defender, *New Hampshire v. Addison.* Hillsborough County, New Hampshire, North Division, Superior Court. Declaration, Deposition and Testimony, 2008.

Public Defenders Office, *Commonwealth of Virginia vs. Portilla-Chicas.* Stafford County Virginia Circuit Court. Analyzed Jury Selection in Stafford County, VA. Affidavit, 2006.

Virginia Indigent Defense Commission, *Commonwealth of Virginia vs. Rogers.* Stafford County Virginia Circuit Court. Analyzed Jury Selection in Stafford County, VA. Report and Testimony, 2006.

Criminal Legal Clinic of Syracuse University Law School, *People v. Tyisha Taylor.* Syracuse City Court. Analyzed Jury Selection System for Syracuse and Onondaga County, New York. Testimony, 2005.

Capital Defenders Office, *New York State v. Sweat.* Analyzed representation in jury selection in Broome County, New York. Two affidavits filed, one relating to factors likely to lead to underrepresentation of African Americans in Jury Pool, another related to the operation of the allocation of jurors among courts in Broome County. (Capital Murder Case.) 2003

Michael J. Spiegel, *New York State v. Dennis Salvador Alvarez-Hernandez,* Analyzed representation in jury selection in Westchester County, New York. Analysis based upon census

data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. Filed affidavit reporting results. (Capital murder case.) 2001--.2003

Capital Defenders Office, *New York State v. Taylor.* Analyzed representation in jury selection in Queens County, New York. Analysis based upon census data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. Filed affidavit reporting results; testified at hearing. Produced demographic analyses by town to assist in jury selection. Testified in 2002. (Capital murder case.) 2000-2002

Mann and Mitchell, *State of Rhode Island vs. David Tremblay.* Analyzed representation in jury selection in Bristol and Providence Counties, Rhode Island. Affidavit filed that includes an analysis of the geographic, racial, and Hispanic representation of jurors in counties in Rhode Island and includes an estimate of the disparities by race and Hispanic status. 1999-2001.

Capital Defenders Office, *New York State v. McCoy.* Analyzed representation in jury selection in Suffolk County, New York. Analysis was based upon census data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. Filed affidavit reporting results. Produced demographic analyses by town to assist in jury selection. (Capital murder case.) 1997-1998.

Reynolds, Caronia and Gianelli. *New York State v. Robert Shulman.* Analyzed representation in jury selection in Suffolk County, New York. Analysis was based upon census data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. Filed affidavit reporting results. (Capital murder case.). 1997. Opinion reproduced in New York *Law Journal*.

Capital Defenders Office, *New York State v. Gordon.* Analyzed representation in jury selection in Queens County, New York. Analysis was based upon census data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. Filed affidavit reporting results. (Capital murder case.) 1997. Opinion reported on and reproduced in New York *Law Journal.*

Capital Defenders Office, *New York State v. Sam Chinn, III.* Analyzed representation in jury selection in Onondaga County. Affidavit filed that presented an analysis of the geographic, racial, and Hispanic representation of jurors. It includes an estimate of the disparities by race and Hispanic status. Plea bargain offered and accepted. Discussed at presentation at the New York State Defenders Association, Glen Falls, NY. (Capital murder case.) 1997.

Capital Defenders Office, *New York State v. George Bell* Analyzed representation in jury selection in Queens County, New York. Analysis was based upon census data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. Filed affidavit reporting results. (Capital murder case.) 1996-1997.

Capital Defenders Office, *New York State v. Hale*. Analyzed representation in jury selection in Kings County, New York. Analysis was based upon census data and estimates, and an emulation of the reported jury selection process using voter lists and other sources. (Affidavit reporting results, capital murder case.) 1996-1997.

Employment Discrimination

Division of Human Rights, *New York State, DHR v. International Longshoremen Association, et al.* Case# 10156672. 2017-present. (Report, testimony, rebuttal report, rebuttal testimony).

Shneyer and Shen. *Grimston vs. Marsh and McLanahan.* Analyzed employment patterns based upon Census data and defendant records. Filed expert report and testified in deposition. Case Settled. 1998-2000.

Shneyer and Shen. *Maglasang vs. Beth Israel Medical Center.* Analyzed employment patterns based upon Census data and defendant records. Filed expert report and testified in deposition. Case Settled. 1999-2000.

Shneyer and Shen. *Williams vs. Safesites, Inc*. Analyzed employment patterns based upon Census data and defendant records. Filed expert report. 1998. Decided.

Shneyer and Shen. *Lachica vs. Emergency Medical Services.* Analyzed employment patterns based upon Census data and defendant records. Case Settled. Filed expert report. Case Settled. 1996-1997.

Other Legal Projects

Center for Constitutional Rights, *Aref, et al v. Holder* (now Sessions). (Report, Deposition 2013-present)

Dewey & LeBoeuf (transferred to Winston, Strawn) and Latino Justice (PRLDEF). *Adriana Aguilar, et al., v. Immigration and Customs Enforcement, Division of the United States Department of Homeland Security, et al*. U.S. District Court for the Southern District of New York. Report, Rebuttal Report and Deposition Testimony, 2010-2012. Settled 2013.

Debevoise & Plimpton; *Five Borough Bicycle Club, et al v. City of New York, et al*. U.S. District Court for the Southern District of New York. Summonsing Patterns Regarding Critical Mass Rides in Manhattan. Report, Deposition and Trial Testimony, 2008-2009. Decided.

Rabinowitz, Boudin, Standard and Krinsky, *Garrison v. I.R.S.* U.S. District Court for the District of Columbia. Filed expert report and testified at trial. Analysis based upon a survey of a sample of all synagogues in the United States. 1991-1992. Settled.

OTHER MAJOR STUDIES AND ANALYSES

Time-Warner Cable of New York. Analyzed and provided maps with underlying ethnic and racial composition for each of the six cable systems managed by Time-Warner Cable in Manhattan, Queens and Brooklyn, 1998-1999 (Proprietary).

New York Times. Analyzed circulation patterns of *the New York Times* in connection with their launch of the Boston and Washington editions, 1996-1997 (Proprietary).

Newspaper Association of America. Analysis of Field Experiment of Full-Color Run of the Press Advertisements in Richmond, Virginia, 1992.

Newspaper Advertising Bureau. Analysis of a Panel Study of Change in Newspaper Readership among Young Adults, 1983-1984.

Friends of Vincenza Restiano. Political Consulting, Polling, and Voting Analysis, Computer Based Voter List Organization, 1983, 1985, 1987, and 1991.

Abt Associates, through Center for the Social Sciences, Columbia University. Transfer of Annual Housing Survey Project to Abt, 1982.

Response Analysis Corporation, Princeton, N.J. Problems in Reliability of Longitudinal Household Surveys. 1982.

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

Future Directions in Spatial Demography Specialist Meeting. Invited participant. Convened by the University of California, Santa Barbara, Penn State University, and NIH Advanced Spatial Analysis Training Program (NICHD 5R-25 HD057002-04) Santa Barbara, CA December 12-13, 2011.

Editorial Board Member, Spatial Demography, 2012-pres.

American Sociological Association: Member, Park Award Committee, 2013; Search Committee, Editor of City and Community; 2008-2009; Organizer, sessions on Applied and Evaluation Research, 1998; Organizer, special session on New York Trends, 1996; Organizer, sessions on Economy and Society, 1984; Organizer, sessions on Social Change, 1979.

National Science Foundation
Review Panel Member: Transforming Undergraduate Education in Science, (also Course Curriculum and Laboratory Improvement) 2011, 2010, 2007, 2006, 2005, and other earlier years; Cyber Discovery of Innovation, 2011; Math Science Partnership, 2009.
Advisory Board Member: School Attendance Boundary Information System (SABINS), 2009 to present.

Advisory Workshop Member, General Social Survey (GSS): The Next Decade and Beyond, 2007; Future Investments in Large-Scale Survey Data Access and Dissemination, 2010.
Occasional Reviewer, NSF Sociology Program.

Occasional Reviewer, American Sociology Review, American Journal of Sociology, Sociological Forum, and other journals

Eastern Sociological Society: Vice President 1997-1998; Program Committee, 1991-1992; Co-Chair, Computer Committee, 1985-1987; President and Discussant, Women's History Session, 1985; Member, Computer Committee, 1984-1985; Coordinator, Computer Workshops, 1984 Annual Meeting; Co-Chair, Membership Committee, 1983-1984; Member, Papers Committee, 1983-1986; President, Historical Sociology Session, 1983; Co-Chair, Papers Committee, 1982-1983; Chair, Membership Committee, 1981-1982; Co-Chair, Conference Committee, 1980-1981.

American Association for Public Opinion Research: Program Committee, 1983-84; Nominating Committee, 1985-1986; Task Force Regarding the Use of Survey-based Evidence in Legal Proceedings, 2010.

New York Chapter, American Association for Public Opinion Research, Associate Program, Chair 2006-07; Program Chair, 2007-08.

International Sociological Association, Research Liaison Committee on Economy and Society
American Economic Association
Social Science History Association
Population Association of America

COURSES TAUGHT

Graduate: (M.A. and Ph.D.) Demography; Computer Applications in the Social Sciences; Advanced Social Statistics; The Sociological Study of Economies; Logic of Social Research; Survey Research Methods; Co-Operative Education Field Placement; Demography; Integrated Social Research; Ph.D. Dissertation and M.A. Thesis Supervision.

Undergraduate: New York City in Your Neighborhood; The Digital Transformation of Everyday Life; Social Change in the City; Methods of Social Research; Sociology of Economic Life; Third World in Social Change; Social Statistics; Sociological Analysis; New York Area Undergraduate Research Program (at Columbia): Housing Crisis in New York City, Equity of the Criminal Justice System, Implementation of No-Fault in New York.

UNIVERSITY, COLLEGE AND DEPARTMENTAL ACTIVITIES

CUNY Podcast, 2011, Assessing the Census

CUNY Forum on CUNYTV, October 27, 2009; April 20, 2011, and May 5, 2012,

CUNY Research Foundation, Faculty Advisory Committee, 2006-2017 Board of Directors, 2006-2017.

CUNY Professional Staff Congress, Legislative Committee, 2000-2001; CUNY, University Committee on Research Awards, 1988-1991; CUNY, University Computer Policy Committee, 1986-1987; CUNY/PSC Sociology Research Award Panel, 1986-1987; Graduate Center Sociology Program, Chair, Search Committee, 1989-1990; Methods Subcommittee, 1986-1987; Computers Committee, 1987-1990.

Queens College, Committee on Fellowship Leave, 1990-1991; Queens College, Committee on Research and Sponsored Programs, 1982-1986; Ad Hoc Computer Committee, Division of Social Sciences, 1982-1986, 1994-1996, 1998-pres.; Official Representative to the Inter-University Consortium for Political and Social Research (ICPSR), 1983--; Workload Committee, 2007-09; Executive Committee of College Personnel and Budget Committee, 2006-2011

Queens College, Department of Sociology, Chair 2006-18; Computer Committee, 1981-2005. (Chair most years); Queens College, Departmental M.A. Program Committee, 1981-2005 (Director and Chair, 1982-1987, 2001-2003, 2004-2006).

CIVIC AND COMMUNITY ACTIVITIES

Yonkers Board of Education, Trustee 1986-1990. President, 1988-1989. Chair, Policy Committee, 1989-1990; Chair, Spelling Bee Committee, 1986-1988.

Yonkers Democratic Party, Second Vice-Chair and District Leader, 1991-1992; District Leader, 1993-1995.

Council of Large City School Districts, 1986-1991. Executive Committee, 1990-1991; Committee on School Choice, 1991; Lobbying Committee, 1989-1990.
New York State School Boards Association, Member Federal Relations Network, 1989-1990.
Long vale Homeowners Association, Board of Directors, 1983-1985. President 1985.
Yonkers Private Industry Council, 1988-1990. Chair, Program and Planning Committee, 1989-1990.
Founding Member and Vice-President, Citizens and Neighbors Organized to Protect Yonkers (CANOPY), 1987-1992.
Volunteer, Friends of Nicholas Wasicsko, 1989 and 1991.
Volunteer, Friends of Vincenza Restiano, 1983, 1985, 1987, and 1991.
Volunteer, Friends of Terence Zaleski, 1991.

Exhibit 2

Exhibit 2. Villages and Census Designated Places in the Town of Islip

	Bayport CDP		Bay Shore CDP		Baywood CDP		Bohemia CDP		Brentwood CDP		Brightwaters village		Central Islip CDP	
SE:T2. Population Density (per Sq. Mile)														
Total Population	8,181		30,392		7,360		9,282		63,115		3,096		33,253	
Population Density (Per Sq. Mile)	2,199.3		5,662.1		3,256.1		1,076.9		5,747.9		3,171.2		4,676.2	
Area (Land)	3.72		5.37		2.26		8.62		10.98		0.98		7.11	
Population in Islip	8,181		30,392		7,360		9,282		63,115		3,096		33,253	
Percent Population in Islip	100.0%		100.0%		100.0%		100.0%		100.0%		100.0%		100.0%	
SE:T14. Hispanic or Latino by Race														
Total Population	8,181		30,392		7,360		9,282		63,115		3,096		33,253	
Not Hispanic or Latino:	7,627	93.2%	18,742	61.7%	4,765	64.7%	8,460	91.1%	21,047	33.4%	2,816	91.0%	18,087	54.4%
White Alone	7,114	87.0%	11,139	36.7%	3,371	45.8%	8,258	89.0%	11,223	17.8%	2,564	82.8%	7,710	23.2%
Black or African American Alone	131	1.6%	6,071	20.0%	1,046	14.2%	72	0.8%	7,865	12.5%	66	2.1%	8,727	26.2%
American Indian and Alaska Native Alone	37	0.5%	1	0.0%	1	0.0%	0	0.0%	0	0.0%	0	0.0%	23	0.1%
Asian Alone	145	1.8%	1,021	3.4%	143	1.9%	110	1.2%	1,033	1.6%	50	1.6%	912	2.7%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	41	0.5%	75	0.3%	75	1.0%	0	0.0%	414	0.7%	72	2.3%	88	0.3%
Two or More Races	159	1.9%	435	1.4%	129	1.8%	20	0.2%	512	0.8%	64	2.1%	627	1.9%
Hispanic or Latino:	554	6.8%	11,650	38.3%	2,595	35.3%	822	8.9%	42,068	66.7%	280	9.0%	15,166	45.6%
White Alone	463	5.7%	4,578	15.1%	1,126	15.3%	742	8.0%	25,890	41.0%	184	5.9%	8,335	25.1%
Black or African American Alone	0	0.0%	1,217	4.0%	172	2.3%	17	0.2%	1,332	2.1%	0	0.0%	316	1.0%
American Indian and Alaska Native Alone	8	0.1%	220	0.7%	91	1.2%	0	0.0%	304	0.5%	0	0.0%	39	0.1%
Asian Alone	0	0.0%	44	0.1%	8	0.1%	0	0.0%	0	0.0%	14	0.5%	0	0.0%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	14	0.0%
Some Other Race Alone	12	0.2%	4,099	13.5%	994	13.5%	26	0.3%	11,811	18.7%	82	2.7%	4,922	14.8%
Two or More Races	71	0.9%	1,492	4.9%	204	2.8%	37	0.4%	2,731	4.3%	0	0.0%	1,540	4.6%

	Islandia		Islip CDP		Islip Terrace		North Bay		North Great		Oakdale CDP		Ocean Beach	
SE:T2. Population Density (per Sq. Mile)														
Total Population	3,352		18,254		5,611		21,886		3,720		7,274		24	
Population Density (Per Sq. Mile)	1,510.0		3,802.9		4,164.9		6,730.1		1,600.0		2,128.6		169.8	
Area (Land)	2.22		4.80		1.35		3.25		2.33		3.42		0.14	
Population in Islip	3,352		18,254		5,611		21,886		3,720		7,274		24	
Percent Population in Islip	100.0%		100.0%		100.0%		100.0%		100.0%		100.0%		100.0%	
SE:T14. Hispanic or Latino by Race														
Total Population	3,352		18,254		5,611		21,886		3,720		7,274		24	
Not Hispanic or Latino:	2,496	74.5%	15,133	82.9%	4,843	86.3%	7,383	33.7%	3,474	93.4%	6,741	92.7%	24	100.0%
White Alone	1,584	47.3%	13,790	75.6%	4,462	79.5%	2,044	9.3%	3,199	86.0%	6,510	89.5%	24	100.0%
Black or African American Alone	395	11.8%	773	4.2%	101	1.8%	3,517	16.1%	138	3.7%	127	1.8%	0	0.0%
American Indian and Alaska Native Alone	0	0.0%	1	0.0%	0	0.0%	175	0.8%	0	0.0%	0	0.0%	0	0.0%
Asian Alone	361	10.8%	391	2.1%	199	3.6%	527	2.4%	104	2.8%	44	0.6%	0	0.0%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	125	3.7%	53	0.3%	0	0.0%	509	2.3%	0	0.0%	0	0.0%	0	0.0%
Two or More Races	31	0.9%	125	0.7%	81	1.4%	611	2.8%	33	0.9%	60	0.8%	0	0.0%
Hispanic or Latino:	856	25.5%	3,121	17.1%	768	13.7%	14,503	66.3%	246	6.6%	533	7.3%	0	0.0%
White Alone	537	16.0%	1,799	9.9%	700	12.5%	4,352	19.9%	204	5.5%	465	6.4%	0	0.0%
Black or African American Alone	33	1.0%	71	0.4%	0	0.0%	417	1.9%	16	0.4%	30	0.4%	0	0.0%
American Indian and Alaska Native Alone	0	0.0%	0	0.0%	0	0.0%	27	0.1%	0	0.0%	0	0.0%	0	0.0%
Asian Alone	20	0.6%	49	0.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	266	7.9%	1,100	6.0%	68	1.2%	7,650	35.0%	0	0.0%	37	0.5%	0	0.0%
Two or More Races	0	0.0%	102	0.6%	0	0.0%	2,057	9.4%	26	0.7%	1	0.0%	0	0.0%

Source: American Community Survey Five Year File, 2017-2013.

Exhibit 2. Villages and Census Designated Places in the Town of Islip

	East Islip CDP		Fire Island CDP		Great River CDP		Hauppauge CDP		Holbrook CDP		Holtsville CDP	
SE:T2. Population Density (per Sq. Mile)												
Total Population	13,616		246		1,441		19,852		26,117		20,201	
Population Density (Per Sq. Mile)	3,447.3		26.7		313.5		1,853.1		3,636.1		2,840.0	
Area (Land)	3.95		9.23		4.60		10.71		7.18		7.11	
Population in Islip	13,616		96		1,441		9508		21,322		3,052	
Percent Population in Islip	100.0%		39.0%		100.0%		47.9%		81.6%		15.1%	
SE:T14. Hispanic or Latino by Race												
Total Population	13,616		246		1,441		19,852		26,117		20,201	
Not Hispanic or Latino:	12,579	92.4%	185	75.2%	1,378	95.6%	18,536	93.4%	23,632	90.5%	17,236	85.3%
White Alone	12,240	89.9%	178	72.4%	1,355	94.0%	16,257	81.9%	21,876	83.8%	15,521	76.8%
Black or African American Alone	98	0.7%	0	0.0%	0	0.0%	770	3.9%	622	2.4%	632	3.1%
American Indian and Alaska Native Alone	0	0.0%	0	0.0%	0	0.0%	15	0.1%	133	0.5%	0	0.0%
Asian Alone	194	1.4%	7	2.9%	15	1.0%	1,234	6.2%	548	2.1%	726	3.6%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	65	0.3%	0	0.0%
Some Other Race Alone	33	0.2%	0	0.0%	0	0.0%	110	0.6%	8	0.0%	0	0.0%
Two or More Races	14	0.1%	0	0.0%	8	0.6%	150	0.8%	380	1.5%	357	1.8%
Hispanic or Latino:	1,037	7.6%	61	24.8%	63	4.4%	1,316	6.6%	2,485	9.5%	2,965	14.7%
White Alone	567	4.2%	54	22.0%	63	4.4%	908	4.6%	2,253	8.6%	2,609	12.9%
Black or African American Alone	66	0.5%	0	0.0%	0	0.0%	56	0.3%	51	0.2%	84	0.4%
American Indian and Alaska Native Alone	0	0.0%	1	0.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Asian Alone	0	0.0%	0	0.0%	0	0.0%	10	0.1%	0	0.0%	0	0.0%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	398	2.9%	6	2.4%	0	0.0%	269	1.4%	86	0.3%	216	1.1%
Two or More Races	6	0.0%	0	0.0%	0	0.0%	73	0.4%	95	0.4%	56	0.3%

	Ronkonkoma		Saltaire village		Sayville CDP		West Bay		West Islip		West Sayville	
SE:T2. Population Density (per Sq. Mile)												
Total Population	18,628		10		16,143		4,745		27,117		4,824	
Population Density (Per Sq. Mile)	2,378.2		43.0		3,052.1		2,164.1		4,284.7		2,297.6	
Area (Land)	7.83		0.23		5.29		2.19		6.33		2.10	
Population in Islip	18,628		10		16,143		4,745		27,117		4,824	
Percent Population in Islip	100.0%		100.0%		100.0%		100.0%		100.0%		100.0%	
SE:T14. Hispanic or Latino by Race												
Total Population	18,628		10		16,143		4,745		27,117		4,824	
Not Hispanic or Latino:	16,847	90.4%	10	100.0%	15,237	94.4%	3,919	82.6%	25,035	92.3%	4,602	95.4%
White Alone	14,928	80.1%	10	100.0%	14,516	89.9%	3,543	74.7%	24,355	89.8%	4,449	92.2%
Black or African American Alone	450	2.4%	0	0.0%	147	0.9%	79	1.7%	192	0.7%	11	0.2%
American Indian and Alaska Native Alone	60	0.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	17	0.4%
Asian Alone	1,012	5.4%	0	0.0%	358	2.2%	192	4.1%	306	1.1%	47	1.0%
Native Hawaiian and Other Pacific Islander Alone	86	0.5%	0	0.0%	29	0.2%	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	46	0.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	11	0.2%
Two or More Races	265	1.4%	0	0.0%	187	1.2%	105	2.2%	182	0.7%	67	1.4%
Hispanic or Latino:	1,781	9.6%	0	0.0%	906	5.6%	826	17.4%	2,082	7.7%	222	4.6%
White Alone	1,385	7.4%	0	0.0%	813	5.0%	624	13.2%	1,484	5.5%	192	4.0%
Black or African American Alone	47	0.3%	0	0.0%	9	0.1%	0	0.0%	13	0.1%	0	0.0%
American Indian and Alaska Native Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	9	0.0%	0	0.0%
Asian Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Some Other Race Alone	221	1.2%	0	0.0%	52	0.3%	103	2.2%	354	1.3%	30	0.6%
Two or More Races	128	0.7%	0	0.0%	32	0.2%	99	2.1%	222	0.8%	0	0.0%

Source: American Community Survey Five Year File, 2017-2013.

Exhibit 3

for the NSCH. An additional 4,000 addresses will receive the screener card in place of the traditional screener instrument. They will have the option to report only if there are children present at the address or not. Respondents will also have the option to report using the web instrument. We anticipate that the screener card instrument will reduce respondent burden for households without children and allow us to more efficiently identify households with children.

III. Data

OMB Control Number: 0607–0990.

Form Number(s): NSCH–S1 (English Screener), NSCH–T1 (English Topical for 0- to 5-year-old children), NSCH–T2 (English Topical for 6- to 11-year-old children), NSCH–T3 (English Topical for 12- to 17-year-old children), NSCH–S–S1 (Spanish Screener), NSCH–S–T1 (Spanish Topical for 0- to 5-year-old children), NSCH–S–T2 (Spanish Topical for 6- to 11-year-old children), NSCH–S–T3 (Spanish Topical for 12- to 17-year-old children), and NSCH–SC1 (Screener Card—perforated).

Type of Review: Regular submission.

Affected Public: Parents, researchers, policymakers, and family advocates.

Estimated Number of Respondents: 72,900 for the screener, 25,515 for the topical, 2,000 for the screener card, and 400 screener card respondents using the web instrument.

Estimated Time per Response: 5 minutes per screener response, 33 minutes per topical response, 2 minutes per screener card response, and 38 minutes per screener card response using the web instrument.

Estimated Total Annual Burden Hours: 20,428 hours.

Estimated Total Annual Cost to Public: $0 (This is not the cost of respondents' time, but the indirect costs respondents may incur for such things as purchases of specialized software or hardware needed to report, or expenditures for accounting or records maintenance services required specifically by the collection.)

Respondent's Obligation: Voluntary.

Legal Authority: Title 13 U.S.C. Section 8(b);42 U.S.C. 701; 1769d(a)(4)(B); 42 U.S.C. 241; 7 U.S.C. 136r(a); and 15 U.S.C. 2609.

IV. Request for Comments

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden (including hours and cost) of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology.

Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval of this information collection; they also will become a matter of public record.

Sheleen Dumas,

Departmental Lead PRA Officer, Office of the Chief Information Officer.

[FR Doc. 2018–24681 Filed 11–9–18; 8:45 am]

BILLING CODE 3510–07–P

DEPARTMENT OF COMMERCE

Bureau of the Census

[Docket Number 180927893–8893–01]

Census Designated Places (CDPs) for the 2020 Census—Final Criteria

AGENCY: Bureau of the Census, Commerce.

ACTION: Notice of final criteria and program implementation.

SUMMARY: Census designated places (CDPs) are statistical geographic entities representing closely settled, unincorporated communities that are locally recognized and identified by name. They are the statistical equivalents of incorporated places, with the primary differences being the lack of a legally defined boundary and an active, functioning governmental structure, chartered by the state and administered by elected officials. CDPs defined for the 2020 Census will also be used to tabulate American Community Survey, Puerto Rico Community Survey, and Economic Census data after 2020, and potentially data from other Bureau of the Census (Census Bureau) censuses and surveys. The Census Bureau is publishing this notice in the **Federal Register** to announce final criteria for defining CDPs for the 2020 Census. In addition to CDPs, the program also encompasses the review and update of census tracts, block groups, and census county divisions.

DATES: This notice's final criteria will be applicable on December 13, 2018.

FOR FURTHER INFORMATION CONTACT: Requests for additional information on this program should be directed to Vincent Osier, Geographic Standards, Criteria, and Quality Branch, Geography Division, U.S. Census Bureau, via email at *geo.psap.list@census.gov* or telephone at 301–763–3056.

SUPPLEMENTARY INFORMATION:

Background

Census designated places (CDPs) [1] are statistical geographic entities representing closely settled, unincorporated communities that are locally recognized and identified by name. They are the statistical equivalents of incorporated places, with the primary differences being the lack of a legally defined boundary and an active, functioning governmental structure, chartered by the state and administered by elected officials. CDPs defined for the 2020 Census will also be used to tabulate American Community Survey, Puerto Rico Community Survey, and Economic Census data after 2020, and potentially data from other Census Bureau censuses and surveys.

The Census Bureau is publishing this notice in the **Federal Register** to announce final criteria for defining CDPs for the 2020 Census. The Census Bureau did not receive any comments in response to proposed criteria published in the **Federal Register** on February 15, 2018 (83 FR 6934). After publication of final criteria in the **Federal Register**, the Census Bureau will offer designated governments or organizations an opportunity to review and, if necessary, suggest updates to the boundaries and attributes of the CDPs in their geographic area under the Participant Statistical Areas Program (PSAP). In addition to CDPs, the program also encompasses the review and update of census tracts, block groups, and census county divisions.

I. History

The CDP concept and delineation criteria have evolved over the past seven decades in response to data user needs for place-level data. This evolution has taken into account differences in the way in which places were perceived, and the propensity for places to incorporate in various states. The result, over time, has been an increase in the number and types of unincorporated communities identified as CDPs. This also results in an increasing consistency in the relationship between the CDP concept and the kinds of places encompassed by the incorporated place category, or a compromise between localized perceptions of place and a concept that would be familiar to data

[1] The term CDP includes comunidades and zonas urbanas in Puerto Rico.

users throughout the United States,[2] Puerto Rico, and the Island Areas.[3]

Although not as numerous as incorporated places or municipalities,[4] CDPs have been important geographic entities since their introduction for the 1950 Census (CDPs were referred to as ''unincorporated places'' from 1950 through the 1970 decennial censuses). For the 1950 Census, CDPs were defined only outside urbanized areas and were required to have at least 1,000 residents. For the 1960 Census, CDPs could also be identified inside urbanized areas outside of New England, but these were required to have at least 10,000 residents. The Census Bureau modified the population threshold within urbanized areas to 5,000 residents in 1970, allowed for CDPs in urbanized areas in New England in 1980, and lowered the threshold for CDPs within urbanized areas to 2,500 in 1990. In time, other population thresholds were adopted for identification of CDPs in Alaska, Puerto Rico, the Island Areas, and on American Indian reservations (AIRs). The Census Bureau eliminated all population threshold requirements for Census 2000, achieving consistency between CDPs and incorporated places, for which the Census Bureau historically has published data without regard to population size.

According to the 2010 Census, more than 38.7 million people in the United States, Puerto Rico, and the Island Areas lived in CDPs. The relative importance of CDPs varies from state to state depending on laws governing municipal incorporation and annexation, but also depending on local preferences and attitudes regarding the identification of places.

II. Summary of Comments Received in Response to Proposed Criteria

The Census Bureau's proposed criteria for the 2020 Census were unchanged from the final criteria used to delineate CDPs for the 2010 Census. The Census Bureau did not receive any comments in response to the proposed criteria published in the **Federal Register** on February 15, 2018 (83 FR 6934). As a result, the proposed criteria are adopted as final criteria without change.

III. CDP Criteria and Guidelines for the 2020 Census

The criteria outlined herein apply to the United States, including AIRs and off-reservation trust lands, Puerto Rico, and the Island Areas. In accordance with the final criteria, the Census Bureau may modify and, if necessary, reject any proposals for CDPs that do not meet the established criteria. In addition, the Census Bureau reserves the right to modify the boundaries and attributes of CDPs as needed to maintain geographic relationships before the final tabulation geography is set for the 2020 Census.

The Census Bureau proposes the following criteria and guidelines for use in identifying the areas that will qualify for designation as CDPs for use in tabulating data from the 2020 Census, the American Community Survey, the Puerto Rico Community Survey, the Economic Census, and potentially other Census Bureau censuses and surveys.

1. A CDP constitutes a single, closely settled center of population that is named. To the extent possible, individual unincorporated communities should be identified as separate CDPs. Similarly, a single community should be defined as a single CDP rather than multiple CDPs with each part referencing the community name and a directional term (*i.e.,* north, south, east, or west). Since a CDP is defined to provide data for a single, named locality, the Census Bureau generally will not accept combinations of places and hyphenated place names defined as a CDP. In the past, communities were often combined as a single CDP in order to comply with the Census Bureau's former minimum population requirements. The Census Bureau's elimination of population threshold criteria starting with Census 2000 made such combinations unnecessary. Other communities were combined because visible features were not available for use as boundaries for separate CDPs. The Census Bureau's policy to allow the use of some nonvisible boundaries so that participants can separate individual communities has dispensed with the need to have multi-place CDPs.

Multiple communities may only be combined to form a single CDP when the identities of these communities have become so intertwined that the communities are commonly perceived and referenced as a single place. For example, the communities of Arden and Arcade in California have grown together over time and residents commonly use the place name Arden-Arcade. Further, because of the intertwined identity, residents would have difficulty identifying a boundary between the separate, historical communities of Arden and Arcade. Multiple communities may also be defined as a single CDP when there are no distinguishable or suitable features in the landscape that can be used as a boundary between the communities, even if the two communities still have separate identities. For example, the CDP of Ashton-Sandy Spring in Maryland encompasses two communities that still maintain separate identities in common, daily usage. The two communities, however, have grown together to such an extent that a clear break between the two communities is no longer identifiable in the landscape. In general, when considering whether to combine multiple communities as a single CDP, the following questions should be taken into account:

- Do residents commonly perceive and refer to the communities as a single entity?
- Are there landscape elements, such as signs, that use a hyphenated name for the community?
- Can residents or other knowledgeable individuals identify clear, commonly accepted boundaries for the individual communities?

2. A CDP generally consists of a contiguous cluster of census blocks comprising a single piece of territory and containing a mix of residential, nonresidential, and commercial uses similar to that of an incorporated place of similar size. Some CDPs, however, may be predominantly residential; such places should represent recognizably distinct, locally known communities, but not typical suburban subdivisions. Examples of such predominantly residential communities that can be recognized as CDPs are colonias, small rural communities, and unincorporated resort and retirement communities.

3. A CDP may not be located, either partially or entirely, within an incorporated place or another CDP.

4. A CDP may be located in more than one county but must not cross state boundaries. It is important to note, however, that since county boundaries provide important demarcations for communities, CDPs that cross county lines should be kept to a minimum and identified only when the community clearly sees itself existing on both sides of a county boundary.

5. There are no minimum population or housing unit thresholds for defining CDPs; however, a CDP must contain some population or housing units or

[2] For Census Bureau purposes, the United States typically refers to only the fifty states and the District of Columbia, and does not include the U.S. territories (Puerto Rico, the Island Areas, and the U.S. Minor Outlying Islands).

[3] The Island Areas include the U.S. territories American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands. There are no CDPs in American Samoa or the Commonwealth of the Northern Mariana Islands because villages are considered incorporated places and cover the entire territory and population in each territory

[4] Known by various terms throughout the United States: Cities, towns (except in the six New England states, New York, and Wisconsin), villages, and boroughs (except in New York and Alaska).

both. For the 2020 Census, the Census Bureau will not accept a CDP delineated with zero population and zero housing units. The Census Bureau recognizes that some communities, such as a resort or other kinds of seasonal communities, may lack population at certain times of the year. Nevertheless, there should be some evidence, generally in the form of houses, barracks, dormitories, commercial buildings and/or other nonresidential structures, providing the basis for local perception of the place's existence. The Census Bureau will review the number of housing units within the place, as reported in the previous decennial census or as seen in imagery, and consider whether additional information is needed before recognizing the CDP. Participants submitting boundaries for places with less than ten housing units may be asked to provide additional information attesting to the existence of the CDP.

6. CDP boundaries should follow visible features, except in those circumstances when a CDP's boundary is coincident with the nonvisible boundary of a state, county, minor civil division (in the six New England states, Michigan, Minnesota, New Jersey, New York, Pennsylvania, and Wisconsin), or incorporated place. CDP boundaries may follow other nonvisible features in instances where reliance upon visible features would result in overbounding of the CDP in order to include housing units on both sides of a road or street feature. Such boundaries might include parcel boundaries and public land survey system lines; fence lines; national, state, or local park boundaries; ridgelines; or drainage ditches.

7. The CDP name should be one that is recognized and used in daily communication by the residents of the community. Because unincorporated communities generally lack legally defined boundaries, a commonly used community name and the geographic extent of its use by local residents is often the best identifier of the extent of a place, the assumption being that if residents associate with a particular name and use it to identify the place in which they live, then the CDP's boundaries can be mapped based on the use of the name. There should be features in the landscape that use the name, such that a non-resident would have a general sense of the location or extent of the community; for example, signs indicating when one is entering the community; highway exit signs that use the name; or businesses, schools, or other buildings that make use of the name. It should not be a name developed solely for planning or other purposes (including simply to obtain data from the Census Bureau) that is not in regular daily use by the local residents and business establishments.

8. A CDP may not have the same name as an adjacent or nearby incorporated place. If the community does not have a name that distinguishes it from other nearby communities, then the community is not a distinct place. The use of directional terms (''north'', ''south'', ''east'', ''west'', and so forth) to merely differentiate the name of a CDP from a nearby municipality where this name is not in local use is not acceptable. For example, the name ''North Laurel'' would be permitted if this name were in local use. The name ''Laurel North'' would not be permitted if it were not in local use. Again, this has much to do with the way in which people typically refer to the places in which they live. It is permissible to change the name of a 2010 CDP for the 2020 Census if the new name provides a better identification of the community.

IV. Definitions of Key Terms

American Indian off-reservation trust land—An area of land located outside the boundaries of an AIR, whose boundaries are established by deed, and which are held in trust by the U.S. federal government for a federally recognized American Indian tribe or members of that tribe.

American Indian reservation (AIR)—An area of land with boundaries established by final treaty, statute, executive order, and/or court order and over which a federally recognized American Indian tribal government has governmental authority. Along with ''reservation,'' designations such as colonies, communities, pueblos, rancherias, and reserves apply to AIRs.

Census block—A geographic area bounded by visible and/or invisible features shown on a map prepared by the Census Bureau. A block is the smallest geographic entity for which the Census Bureau tabulates and publishes decennial census data.

Coextensive—A description of two or more geographic entities that cover exactly the same area, with all boundaries shared.

Colonia—A small, generally unincorporated community located in one of the states on the U.S.-Mexico border where residents often build or provide their own housing and that usually lacks utilities, paved roads, and other infrastructure typically found other similarly sized communities.

Comunidad—A CDP in Puerto Rico that is not related to a municipio's seat of government, called an aldea or a ciudad prior to the 1990 Census.

Contiguous—A description of areas sharing common boundary lines, more than a single point, such that the areas, when combined, form a single piece of territory. Noncontiguous areas form disjoint pieces.

Housing unit—A house, an apartment, a mobile home or trailer, or a group of rooms or a single room occupied as a separate living quarter or, if vacant, intended for occupancy as a separate living quarter. Separate living quarters are those in which the occupants live and eat separately from any other residents of the building and which have direct access from outside the building or through a common hall.

Incorporated place—A type of governmental unit, incorporated under state law as a city, town (except in New England, New York, and Wisconsin), borough (except in Alaska and New York), or village, generally to provide governmental services for a concentration of people within legally prescribed boundaries.

Minor civil division (MCD)—The primary governmental or administrative division of a county in 28 states and the Island Areas having legal boundaries, names, and descriptions. The MCDs represent many different types of legal entities with a wide variety of characteristics, powers, and functions depending on the state and type of MCD. In some states, some or all of the incorporated places also constitute MCDs.

Municipio—A type of governmental unit that is the primary legal subdivision of Puerto Rico. The Census Bureau treats the municipio as the statistical equivalent of a county.

Nonvisible feature—A map feature that is not visible on the ground and in imagery such as a city or county boundary through space, a property line, or line-of-sight extension of a road.

Statistical geographic entity—A geographic entity that is specially defined and delineated, such as block group, CDP, or census tract, so that the Census Bureau may tabulate data for it. Designation as a statistical entity neither conveys nor confers legal ownership, entitlement, or jurisdictional authority.

Urbanized area (UA)—An area consisting of a central place(s) and adjacent urban fringe that together have a minimum residential population of at least 50,000 people and generally an overall population density of at least 1,000 people per square mile. The Census Bureau uses published criteria to determine the qualification and boundaries of UAs at the time of each decennial census.

Visible feature—A map feature that can be seen on the ground and in

imagery, such as a road, railroad track, major above-ground transmission line or pipeline, river, stream, shoreline, fence, sharply defined mountain ridge, or cliff. A nonstandard visible feature is a feature that may not be clearly defined on the ground (such as a ridge), may be seasonal (such as an intermittent stream), or may be relatively impermanent (such as a fence). The Census Bureau generally requests verification that nonstandard features used as boundaries for the PSAP geographic areas pose no problem in their location during field work.

Zona urbana—In Puerto Rico, the settled area functioning as the seat of government for a municipio. A zona urbana cannot cross a municipio boundary.

Dated: October 30, 2018.

Ron S. Jarmin,

Deputy Director, Performing the Non-Exclusive Functions and Duties of the Director, Bureau of the Census.

[FR Doc. 2018–24571 Filed 11–9–18; 8:45 am]

BILLING CODE 3510–07–P

DEPARTMENT OF COMMERCE

Bureau of the Census

[Docket Number 180926886–8886–01]

Block Groups for the 2020 Census—Final Criteria

AGENCY: Bureau of the Census, Commerce.

ACTION: Notice of final criteria and program implementation.

SUMMARY: Block groups are statistical geographic subdivisions of a census tract defined for the tabulation and presentation of data from the decennial census and selected other statistical programs. Block groups also will be used to tabulate and publish estimates from the American Community Survey (ACS) after 2020 and potentially data from other Bureau of the Census (Census Bureau) censuses and surveys. The Census Bureau is publishing this notice in the **Federal Register** to announce final criteria for defining block groups for the 2020 Census Participant Statistical Areas Program (PSAP). In addition to block groups, the program also encompasses the review and update of census tracts, census designated places, and census county divisions.

DATES: This notice's final criteria will be applicable on December 13, 2018.

FOR FURTHER INFORMATION CONTACT: Requests for additional information on this program should be directed to Vincent Osier at the Geographic Standards, Criteria, and Quality Branch, Geography Division, U.S. Census Bureau, via email at *geo.psap.list@census.gov* or by telephone at 301–763–3056.

SUPPLEMENTARY INFORMATION:

Background

Block groups are statistical geographic subdivisions of a census tract defined for the tabulation and presentation of data from the decennial census and selected other statistical programs. Block groups also will be used to tabulate and publish estimates from the American Community Survey (ACS) [1] after 2020 and potentially data from other Bureau of the Census (Census Bureau) censuses and surveys.

The Census Bureau is publishing this notice in the **Federal Register** to announce final criteria for defining block groups for the 2020 Census. In addition to providing final criteria for block groups, this notice also contains a summary of comments received in response to proposed criteria published in the **Federal Register** on February 15, 2018 (83 FR 6937), as well as the Census Bureau's response to those comments. After publication of this final criteria in the **Federal Register,** the Census Bureau will offer designated governments or organizations an opportunity to review and, if necessary, suggest updates to the boundaries and attributes of the block groups in their geographic area under the Participant Statistical Areas Program (PSAP). In addition to block groups, the program also encompasses the review and update of census tracts, census designated places, and census county divisions. The Census Bureau published a notice, explaining PSAP process and participation, in the **Federal Register** on November 28, 2017 (82 FR 56208).

I. History of Block Groups

The Census Bureau first delineated block groups as statistical geographic divisions of census tracts for the 1970 Census, comprising contiguous combinations of census blocks for data presentation purposes. At that time, census block groups only existed in urbanized areas in which census blocks were defined. Block groups were defined without regard to political and administrative boundaries, with an average population of 1,000, and to be approximately equal in area.

As use of census block, block group, and census tract data increased among data users, the Census Bureau expanded these programs to cover additional geographic areas while redefining the population threshold criteria to more adequately suit data users' needs. The 1990 Census was the first in which census blocks and block groups were defined throughout the entirety of the United States, Puerto Rico, and the Island Areas. For the 2000 Census, as with census tracts, the Census Bureau increased the number of geographic areas whose boundaries could be used as block group boundaries, and allowed tribal governments of federally recognized American Indian tribes with a reservation and/or off-reservation trust lands to delineate tribal block groups without regard to state and/or county boundaries, provided the tribe had a 1990 Census population of at least 1,000.

For the 2010 Census, the Census Bureau adopted changes to block group criteria that recognized their utility as a framework of small geographic areas and established tribal block groups as a geographic framework for presenting and analyzing statistical and other data for a variety of communities, settlement patterns, and landscapes. The Census Bureau augmented its minimum and maximum population threshold with housing unit thresholds for use in defining block groups for seasonal communities that have no or low population on census day (April 1). In addition, the Census Bureau formalized criteria for block groups defined for employment centers, airports, parks, large water bodies, and other special land uses that had been permitted in previous decades, but never specified within the criteria. The Census Bureau also established tribal block groups as a geographic framework defined within federally recognized American Indian reservations and off-reservation trust lands that is fully separate from the standard block groups defined within counties.

II. Summary of Comments Received in Response to the Proposed Criteria

The **Federal Register** notice published on February 15, 2018 (83 FR 6937) requested comment on the proposed block group criteria for the 2020 Census. The proposed criteria were unchanged from the final criteria adopted for the 2010 Census.

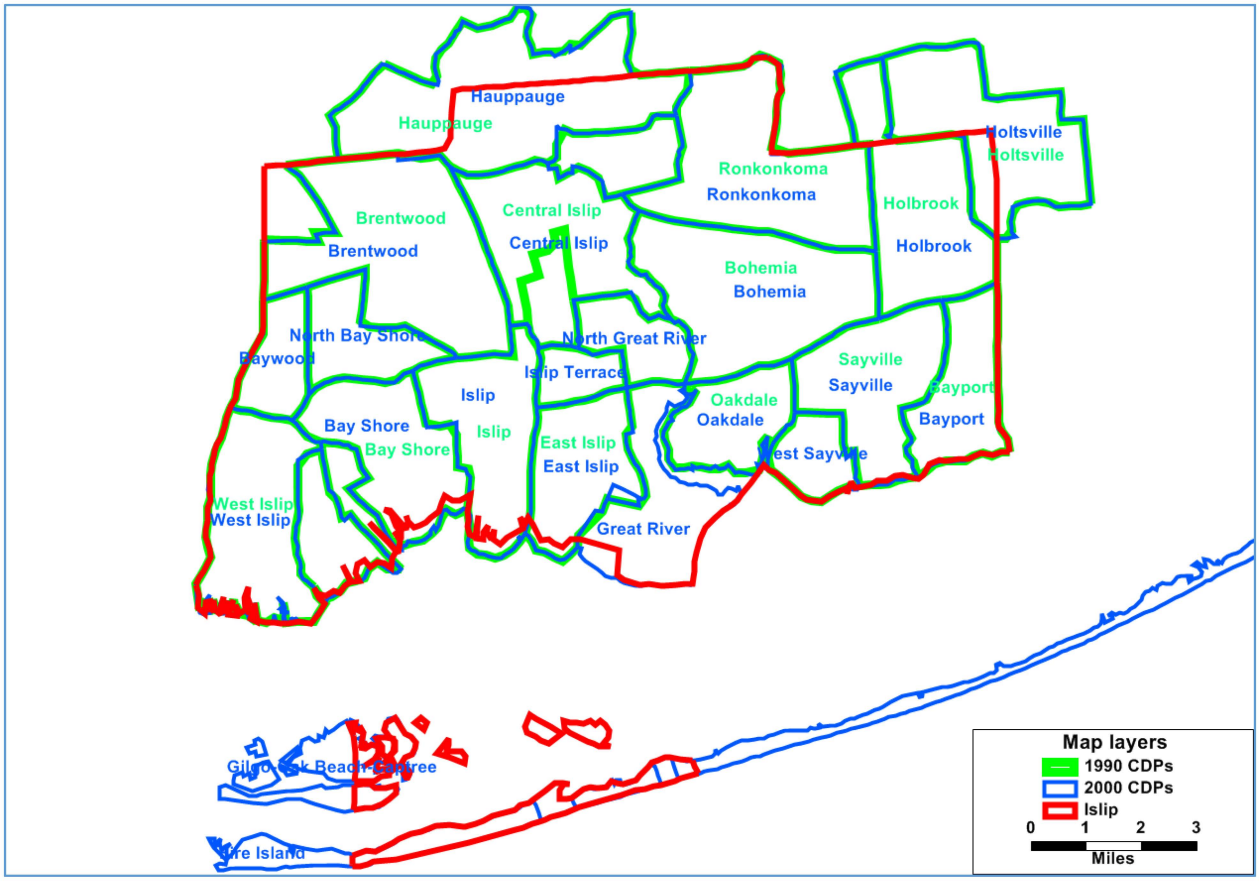
The Census Bureau received comments from 16 individuals on one or more topics related to (1) use of non-visible political boundaries when defining block groups, (2) use of employment data to define block groups

[1] The ACS is conducted in the United States and in Puerto Rico. In Puerto Rico the survey is called the Puerto Rico Community Survey. For ease of discussion, throughout this document the term ACS is used to represent the surveys conducted in the United States and in Puerto Rico.

CDPs in Islip 1940 thru 2010

Name	Version 2010	Version 2000	Version 1990	Version 1980	Version 1970	Version 1960	Version 1950	Version 1940	Notes
Bayport	8,896	8,662	7,702	9,282	8,232	Deleted	1,463	1,509	
Bay Shore	26,337	23,852	21,279	10,784	11,119	Deleted	9,665	8,631	
Baywood	7,350	7,571	7,351					.	
Bohemia	10,180	9,871	9,556	9,308	8,926		Deleted	765	
Brentwood	60,664	53,917	45,218	44,321	27,846	15,387	2,803	1,704	
Central Islip	34,450	31,950	26,028	19,734	36,391	Deleted	3,067	2,447	
East Islip	14,475	14,078	14,325	13,852	6,861	Deleted	2,834	2,203	
Fire Island	292	310						.	
Gilgo-Oak Beach-Captree	Renamed	333						.	Name changed to Oak Beach-Captree CDP and FIPS code changed to 54112 after 2000
Great River	1,489	1,546						.	
Holbrook	27,195	27,512	25,273	24,382	Renamed	3,441	Deleted	719	Name changed to Holbrook-Holtsville (35067) after 1960
Holbrook-Holtsville				Split	12,103			.	Split to form Holbrook (35056) and Holtsville (35254) after 1970
Holtsville	19,714	17,006	14,972	13,515				.	
Islip	18,689	20,575	18,924	13,438	7,692	Deleted	5,254	3,499	
Islip Terrace	5,389	5,641	5,530	5,588		Deleted	1,579	1,338	
North Bay Shore	18,944	14,992	12,799	35,020				.	
North Great River	4,001	3,929	3,964	11,416	12,080			.	
Oak Beach-Captree	286							.	Name changed from Gilgo-Oak Beach-Captree CDP and FIPS code changed from 28997 since 2000
Oakdale	7,974	8,075	7,875	8,090	7,334			.	
Ronkonkoma	19,082	20,029	20,391	Renamed	7,284	4,220	1,334	646	Name changed from Lake Ronkonkoma (40838) after 1980
Sayville	16,853	16,735	16,550	12,013	11,680	Deleted	4,251	4,183	
West Bay Shore	4,648	4,775	4,907	5,118				.	
West Islip	28,335	28,907	28,419	29,533	17,374		Deleted	1,651	
West Sayville	5,011	5,003	4,680	8,185	7,386	Deleted	1,370	740	

Source: From Historical List of CDPs, Internal Census Document shared with me by Michael R. Ratcliffe, Assistant Division Chief, Geographic Standards, Criteria, Research, and Quality, Geography Division at U.S. Census Bureau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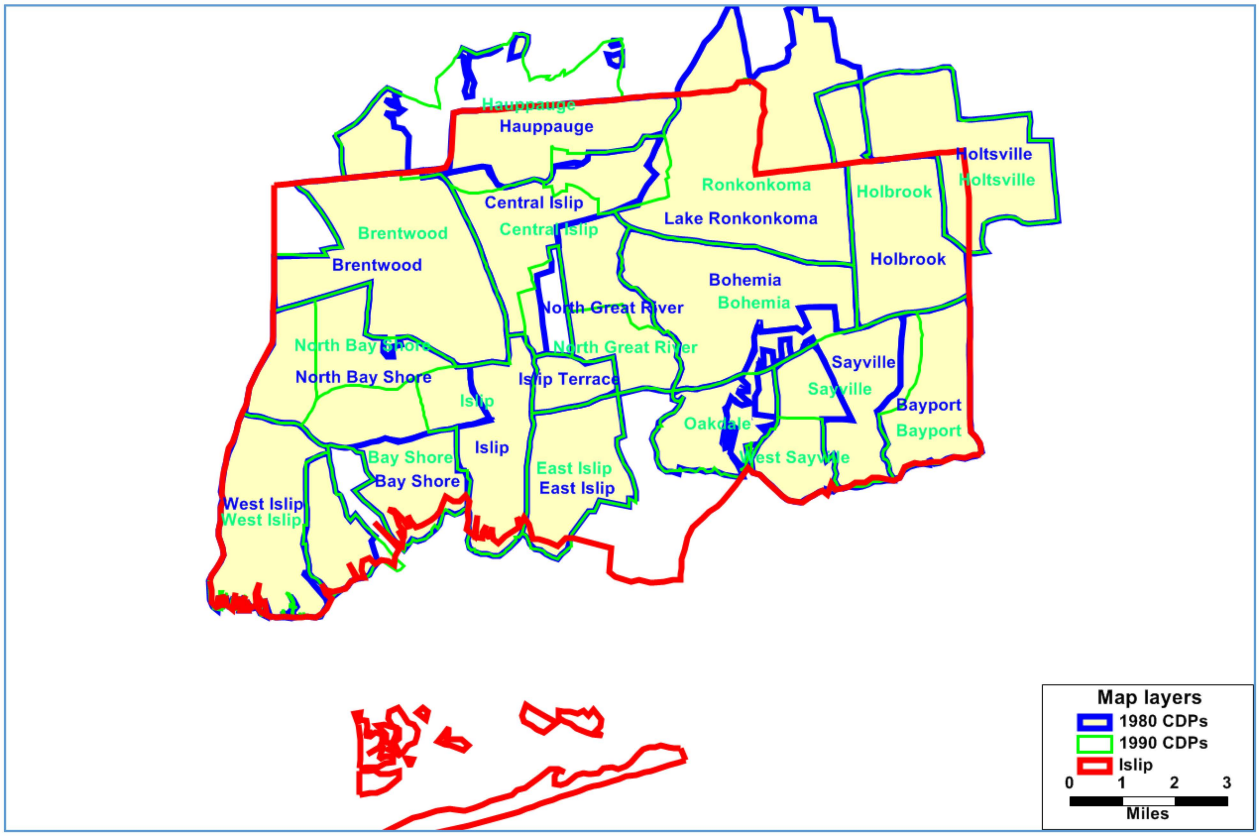
Hauppauge
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Bohemia
Bohemia
North Great River
North Great River
North Bay Shore
North Bay Shore
Islip Terrace
Sayville
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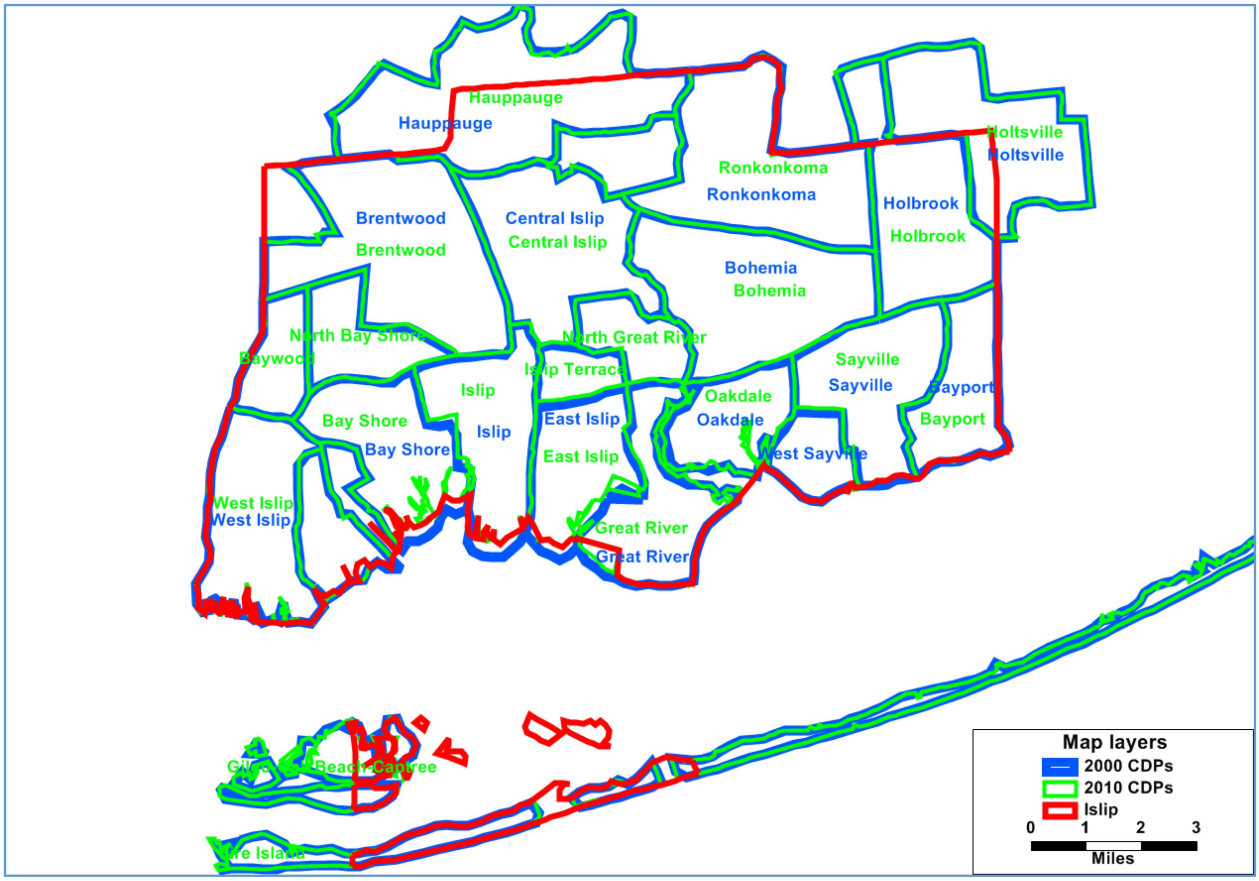

Source: Census Maps and Boundaries for 1980, 1990, 2000, and 2010. Indications are that unincorporated territory in the northwest corner of Islip was added to the Brentwood CDP since 2010.

Exhibit 4

Exhibit 4--Race and Latino Change in Islip 1980 to 2017. Based upon the American Community Survey and Censuses.

	American Community Survey 2017 One Year		American Community Survey 2016 One Year		American Community Survey 2010 One Year		American Community Survey 2006 One Year		2000 Census Long Form		1990 Census Long Form		1980 Census	
Population	333,701		333,743		335,796		326,506		322,625		299,587		298,897	
NHWhite	174,303	52.23%	176,581	52.91%	186,651	55.58%	204,906	62.76%	217,690	67.47%	237,100	79.14%	254,479	85.14%
NHBlack	28,558	8.56%	28,130	8.43%	28,956	8.62%	29,581	9.06%	27,370	8.48%	18,062	6.03%	15,099	5.05%
NHAsian	8,077	2.42%	10,709	3.21%	10,415	3.10%	8,151	2.50%	3,835	1.19%	4,508	1.50%	2,207	0.74%
Latino	115,233	34.53%	113,398	33.98%	102,979	30.67%	77,957	23.88%	65,160	20.20%	39,135	13.06%	26,259	8.79%
Population 18+	257,121		257,296		251,068		244,102		234,490					
NHWhite	140,215	54.53%	143,118	55.62%	145,453	57.93%	158,484	64.93%	164,070	69.97%				
Black	27,789	10.81%	22,956	8.92%	23,431	9.33%	21,217	8.69%	17,930	7.65%				
Asian	6,999	2.72%	8,675	3.37%	8,028	3.20%	6,945	2.85%	4,715	2.01%				
Latino	83,584	32.51%	80,482	31.28%	71,327	28.41%	55,058	22.56%	43,810	18.68%				
Citizens Population 18+	228,156		221,395		212,533		214,476		209,860					
NHWhite	138,613	60.75%	141,429	63.88%	143,153	67.36%	155,799	72.64%	161,310	76.87%				
Black	25,033	10.97%	21,457	9.69%	20,166	9.49%	19,319	9.01%	15,870	7.56%				
Asian	5,437	2.38%	5,623	2.54%	6,155	2.90%	3,587	1.67%	2,720	1.30%				
Latino	59,124	25.91%	50,806	22.95%	40,699	19.15%	33,479	15.61%	26,965	12.85%				
Citizens Population Under 18	73,355		73,468		82,001		80,548		84,970					
NHWhite	34,088	46.47%	33,366	45.42%	41,104	50.13%	46,422	57.63%	53,325	62.76%				
Black	8,297	11.31%	6,355	8.65%	6,841	8.34%	9,168	11.38%	9,220	10.85%				
Asian	1,111	1.51%	2,018	2.75%	1,930	2.35%	1,077	1.34%	1,115	1.31%				
Latino	28,616	39.01%	30,481	41.49%	29,643	36.15%	21,900	27.19%	19,240	22.64%				

Notes on Sources of Data on Table on Population Change

The 2017, 2016, 2010 and 2006 One Year ACS are based upon a large sample of the population collected in that year.

The 2000 Data are from a special tabulation (STP-76) arranged by Kimball Brace for a group of redistricting consultants. It is based upon the Census Long Form sample.

Note that the Population 18+ and the Citizen Population 18+ from the ACS includes Black and Asian whether or not they are Hispanic.

The 1990 Census did not have available Citizen of voting age population data broken down by race and Hispanic Status

The 1980 Census did not have any information on citizenship at all that was tabulated.

The 2000 and the ACS one year data included a category for non-Hispanics entitled other.

Exhibit 5a--Composition of Demonstrative Districting Plan based upon ACS 2013-2017 ACS and 2010 Census Blocks

Report on Census Block Plan											
District	**Total Population**	**Deviation**	**% Deviation**								
District1	83,601	-285	-0.34%								
District2	84,549	663	0.79%								
District3	84,144	258	0.31%								
District4	83,249	-637	-0.76%								
Islip Total	335,543										
District	**Citizens of Voting Age 2016 ACS**	**CVAP NH White 2016 ACS**	**% CVAP NH White 2016 ACS**	**CVAP Hisp 2016 ACS**	**% CVAP Hisp 2016 ACS**	**CVAP NH Black 2016 ACS**	**% CVAP NH Black 2016 ACS**	**CVAP NH Asian 2016 ACS**	**% CVAP NH Asian 2016 ACS**	**CVAP NH All Other 2016 ACS**	**% CVAP NH All Other 2016 ACS**
District1	44,307	9,757	22.0%	24,111	54.4%	8,889	20.1%	1,143	2.6%	407	0.9%
District2	56,249	39,191	69.7%	8,278	14.7%	6,705	11.9%	1,829	3.3%	246	0.4%
District3	61,069	44,412	72.7%	9,276	15.2%	5,966	9.8%	1,287	2.1%	128	0.2%
District4	60,237	53,630	89.0%	3,699	6.1%	1,219	2.0%	1,283	2.1%	406	0.7%
Islip Total	221,862	146,990	66.3%	45,364	20.4%	22,779	10.3%	5,542	2.5%	1,187	0.5%
District	**Citizen Population**	**Citizen NH White**	**% Citizen NH White**	**Citizen Hisp**	**% Citizen Hisp**	**Citizen NH Black**	**% Citizen NH Black**	**Citizen NH Asian**	**% Citizen NH Asian**	**Citizen NH All Other**	**% Citizen NH All Other**
District1	65,983	14,031	21.3%	38,208	57.9%	11,606	17.6%	1,478	2.2%	660	1.0%
District2	74,322	49,592	66.7%	12,759	17.2%	9,088	12.2%	2,520	3.4%	362	0.5%
District3	80,882	54,567	67.5%	16,084	19.9%	8,036	9.9%	1,947	2.4%	248	0.3%
District4	76,679	66,945	87.3%	5,624	7.3%	1,620	2.1%	1,923	2.5%	567	0.7%
Islip Total	297,866	185,135	62.2%	72,674	24.4%	30,351	10.2%	7,868	2.6%	1,838	0.6%

Source: ACS 2013-2017 Five Year File from Census Redistricting Office and 2010 Census for Population by Blocks. Citizen and CVAP Data allocated to blocks based upon population to allow districts to be built from blocks.

Exhibit 5

Exhibit 5b--Composition of Demonstrative Districting Plan based upon 2013 to 2017 ACS and 2010 Census Data Allocated to Islip Election Districts

Report on Election District Plan											
District	Total Population	Deviation	% Deviation								
District1	83,464	-475	-0.57%								
District2	84,306	367	0.44%								
District3	83,698	-241	-0.29%								
District4	84,289	350	0.42%								
Islip Total	335,756										
District	Citizens of Voting Age 2016	CVAP NH White 2016 ACS	% CVAP NH White 2016 ACS	CVAP Hisp 2016 ACS	% CVAP Hisp 2016 ACS	CVAP NH Black 2016 ACS	% CVAP NH Black 2016 ACS	CVAP NH Asian 2016 ACS	% CVAP NH Asian 2016 ACS	CVAP NH All Other 2016 ACS	% CVAP NH All Other
District1	44,219	9,740	22.0%	24,061	54.4%	8,871	20.1%	1,139	2.6%	407	0.9%
District2	61,331	44,568	72.7%	9,346	15.2%	6,000	9.8%	1,290	2.1%	128	0.2%
District3	55,610	38,617	69.4%	8,218	14.8%	6,695	12.0%	1,833	3.3%	248	0.4%
District4	60,861	54,216	89.1%	3,743	6.2%	1,213	2.0%	1,284	2.1%	404	0.7%
Islip Total	222,021	147,141	66.3%	45,368	20.4%	22,779	10.3%	5,546	2.5%	1,187	0.5%
District	Citizen Populatio	Citizen NH White	% Citizen NH White	Citizen Hisp	% Citizen Hisp	Citizen NH Black	% Citizen NH Black	Citizen NH Asian	% Citizen NH Asian	Citizen NH All	% Citizen NH All
District1	65,852	14,005	21.3%	38,134	57.9%	11,579	17.6%	1,473	2.2%	660	1.0%
District2	81,241	54,773	67.4%	16,177	19.9%	8,088	10.0%	1,954	2.4%	249	0.3%
District3	73,380	48,736	66.4%	12,676	17.3%	9,081	12.4%	2,522	3.4%	365	0.5%
District4	77,589	67,809	87.4%	5,690	7.3%	1,603	2.1%	1,923	2.5%	564	0.7%
Islip Total	298,062	185,323	62.2%	72,678	24.4%	30,351	10.2%	7,872	2.6%	1,838	0.6%

Source: ACS 2013-2017 Five Year File from Census Redistricting Office and 2010 Census for Population by block and blockgroup. Citizen and CVAP Data allocated to blocks based upon population fractions of each block of blockgroup. Block level data then allocated to election districts by proportional using Suffolk County Election District Maps overlayed by block maps. Small count errors are the result of the areal based allocation.

Exhibit 6

Exhibit 6--Measures of Compactness for Demonstrative Districting Plans

Measures for Block Based Plan

	Roeck	Schwartzberg	Perimeter	Polsby-Popper	Length-Width	Population Polygon	Population Circle	Ehrenburg	Minimum Convex Polygon
DISTRICT1	0.61	1.25	17.40	0.62	0.36	0.92	0.76	0.57	0.88
DISTRICT2	0.37	1.77	40.09	0.24	3.36	0.60	0.38	0.17	0.60
DISTRICT3	0.22	2.52	73.82	0.05	1.35	0.69	0.47	0.31	0.37
DISTRICT4	0.65	1.19	27.72	0.60	0.32	0.99	0.86	0.67	0.90
Sum	N/A	N/A	159.03	N/A	N/A	**N/A**	**N/A**	N/A	N/A
Min	0.22	1.19	N/A	0.05	0.32	0.60	0.38	0.17	0.37
Max	0.65	2.52	N/A	0.62	3.36	0.99	0.86	0.67	0.90
Mean	0.46	1.68	N/A	0.38	1.35	0.80	0.62	0.43	0.69
Std. Dev.	0.20	0.62	N/A	0.28	1.42	0.18	0.23	0.23	0.25

Measures for Election District Based Plan

	Roeck	Schwartzberg	Perimeter	Polsby-Popper	Length-Width	Population Polygon	Population Circle	Ehrenburg	Minimum Convex Polygon
DISTRICT1	0.61	1.21	17.89	0.59	0.18			0.57	0.88
DISTRICT2	0.40	1.48	36.98	0.19	4.60	0.74	0.60	0.36	0.75
DISTRICT3	0.17	1.47	79.00	0.07	1.57	0.54		0.20	0.41
DISTRICT4	0.61	1.27	33.26	0.41	2.06	0.93	0.81	0.68	0.82
Sum	N/A	N/A	167.13	N/A	N/A			N/A	N/A
Min	0.17	1.21	N/A	0.07	0.36			0.20	0.41
Max	0.61	1.48	N/A	0.59	0.37			0.68	0.88
Mean	0.49	1.33	N/A	0.32	7.13			0.45	0.72
Std. Dev.	0.21	0.14	N/A	0.23	1.12			0.21	0.21

Definition and Sources for Compactness Measures

Definitions for the nine measures of compactness: Reock, Schwartzberg, Perimeter, Polsby-Popper, Length-Width, Population Polygon, Population Circle, Ehrenburg, and Minimum Convex Polygon. Computed using Maptitude for Redistricting. This documentation is provided by Maptitude.

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Polsby, D. D., and R. D. Popper. The third criterion: compactness as a procedural safeguard against partisan gerrymandering. *Yale Law and Policy Review*, 9:301-353, 1991.

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Young , H. P. Measuring the compactness of legislative districts. *Legislative Studies Quarterly*, 13(1):105-115, 1988.

Ehrenburg 1892, see Frolov, Y. S., Measuring the shape of geographic phenomena: a history of the issue, Soviet Geography 16, 676-87, 1995.

Iowa State Legislature Web Site: HTTP://WWW.LEGIS.STATE.IA.US/REDIST/JUNE2001REPORT.HTM.

Reock Test

The Reock test is an area-based measure that compares each district to a circle, which is considered to be the most compact shape possible. For each district, the Reock test computes the ratio of the area of the district to the area of the minimum enclosing circle for the district. The measure is always between 0 and 1, with 1 being the most compact. The Reock test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.

See [Reock 1961] and [Young 1988].

Schwartzberg Test

The Schwartzberg test is a perimeter-based measure that compares a simplified version of each district to a circle, which is considered to be the most compact shape possible. This test requires the base layer that was used to create the districts. The base layer is used to simplify the district to exclude complicated coastlines.

For each district, the Schwartzberg test computes the ratio of the perimeter of the simplified version of the district to the perimeter of a circle with the same area as the original district. The district is simplified by only keeping those shape points where three or more areas in the base layer come together. Water features and a neighboring state also count as base layer areas. This measure is usually greater than or equal to 1, with 1 being the most compact. Unfortunately, the simplification procedure can result in a polygon that is substantially smaller that the original district, which can yield a ratio less than 1 (e.g., an island has a 0 ratio). The Schwartzberg test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.

See [Schwartzberg 1966] and [Young 1988].

Perimeter Test

The Perimeter test computes the sum of the perimeters of all the districts. The Perimeter test computes one number for the whole plan. If you are comparing several plans, the plan with the smallest total perimeter is the most compact.

See [Young 1988].

Polsby-Popper Test

The Polsby-Popper test computes the ratio of the district area to the area of a circle with the same perimeter: $4\pi\text{Area}/(\text{Perimeter}^2)$. The measure is always between 0 and 1, with 1 being the most compact. The Polsby-Popper test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.

See [Cox 1929], [Polsby and Popper 1991], and [Niemi, Grofman, Carlucci, and Hofeller 1990].

Length-Width Test

The length-width test computes the absolute difference between the width (east-west) and the height (north-south) of each district. The bounding box of a district is computed in longitude-latitude space, and the height and width of the box through the center point are compared. The total is divided by the number of districts to create the average length-width compactness. A lower number indicates better length-width compactness. This measure of compactness is designed for contiguous districts, since the bounding box encloses the entire district.

See HTTP://WWW.LEGIS.STATE.IA.US/REDIST/JUNE2001REPORT.HTM.

Population Polygon Test

The population polygon test computes the ratio of the district population to the approximate population of the convex hull of the district (minimum convex polygon which completely contains the district). The population of the convex hull is approximated by overlaying it with a base layer, such as Census Blocks. The measure is always between 0 and 1, with 1 being the most compact. The Population Polygon test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.

See [Hofeller and Grofman 1990] and [Niemi, Grofman, Carlucci, and Hofeller 1990].

Minimum Convex Polygon Test

As above, but computes only a ratio of the area of the district to the area of the convex hull of the district, without regard to population within the areas.

Population Circle Test

The population circle test computes the ratio of the district population to the approximate population of the minimum enclosing circle of the district. The population of the circle is approximated by overlaying it with a base layer, such as Census Blocks. The measure is always between 0 and 1, with 1 being the most compact. The Population Circle test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.

See [Hofeller and Grofman 1990] and [Niemi, Grofman, Carlucci, and Hofeller 1990].

Ehrenburg Test

The Ehrenburg test computes the ratio of the largest inscribed circle divided by the area of the district. The measure is always between 0 and 1, with 1 being the most compact. The Ehrenburg test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan.

See [Frolov 1975].